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Script Handbook for Interactive Scientific Website Building

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Contents

1 Basic Structure **1**
- 1.1 Preparation . . . 2
- 1.2 form . . . 4
- 1.3 switch for the further step . . . 10
- 1.4 input . . . 15
- 1.5 table . . . 26

2 File Handling **41**
- 2.1 Unique file name generating . . . 42
- 2.2 File uploading . . . 47

3 Special Effects **63**
- 3.1 Locking choices . . . 64
- 3.2 Showing equations by request . . . 66
- 3.3 Showing definitions of notations by request . . . 71
- 3.4 Calculating values of items by giving values of other items . . . 75
- 3.5 Eliminating cells of table . . . 90

4 Result Presentation **97**
- 4.1 Running program . . . 98
- 4.2 Result presentation . . . 111

5 Miscellaneous **121**
- 5.1 File deleting . . . 122
- 5.2 Redirection . . . 123

A Some Auxiliary Files **127**
- A.1 main.css . . . 128
- A.2 setup-reader.c . . . 131

B Basic Commands for Website Building **141**
- B.1 HTML (Hyper Text Markup Language) and XHTML (EXtensible HTML) . . . 142
  - B.1.1 html . . . 142
  - B.1.2 head . . . 143
  - B.1.3 Comments . . . 144
  - B.1.4 Tags and elements . . . 145
  - B.1.5 Attributes . . . 146
  - B.1.6 Headings . . . 147
  - B.1.7 Text formatting . . . 148
  - B.1.8 Links and the anchor a . . . 149
  - B.1.9 img . . . 150
  - B.1.10 Lists ol, ul and li . . . 151
  - B.1.11 form and fieldset . . . 152
  - B.1.12 input, select, and textarea . . . 153
  - B.1.13 table . . . 154
  - B.1.14 Frames and frameset . . . 156
  - B.1.15 Characters and symbols . . . 157

B.2 CSS (Cascading Style Sheets) . . . 158
B.2.1 Comments . . . 158
B.2.2 Three ways for inserting CSS . . . 159
B.2.3 Four forms for defining styles . . . 160
B.2.4 Syntax for style declaration . . . 161
B.2.5 Image handling . . . 163
B.2.6 Frequently used style properties and values . . . 164
B.3 JavaScript . . . 166
B.3.1 Start with JavaScript . . . 166
B.3.2 Comments . . . 167
B.3.3 Variables . . . 168
B.3.4 Function defining . . . 169
B.3.5 if . . . 170
B.3.6 switch . . . 171
B.3.7 for . . . 172
B.3.8 while . . . 173
B.3.9 Events . . . 174
B.3.10 Frequently used JavaScript methods . . . 175
B.4 HTML DOM (Document Object Model) . . . 176
B.4.1 Nodes and node tree . . . 176
B.4.2 Methods . . . 177
B.4.3 Properties . . . 178
B.4.4 Examples . . . 179
B.4.5 Frequently used HTML DOM properties for style declaration . . . 180
B.4.6 Navigator object . . . 182
B.4.7 Location object . . . 183
B.5 PHP (PHP: Hypertext Preprocessor) . . . 184
B.5.1 Start with PHP . . . 184
B.5.2 Comments . . . 185
B.5.3 Variables . . . 186
B.5.4 if . . . 187
B.5.5 switch . . . 188
B.5.6 for . . . 189
B.5.7 while . . . 190
B.5.8 form . . . 191
B.5.9 File handling . . . 192
B.5.10 File uploading . . . 193
B.5.11 E-mail sending . . . 194
B.5.12 Frequently used functions . . . 195
B.6 Colors . . . 196
B.6.1 Red series . . . 196
B.6.2 Green series . . . 197
B.6.3 Blue series . . . 198
B.6.4 Violet series . . . 199
B.6.5 Yellow series . . . 200
B.6.6 White-black series . . . 201
B.6.7 Non-white backgrounds . . . 202

Chapter 1

Basic Structure

1.1 Preparation

Template 1: **head** and headings

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> Demos for Interactive Scientific Website </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=uft-8" />

<link rel="stylesheet" type="text/css" href="main/main.css" />

</head>

<body class="en">

<!-- ****************************************************** -->
<!-- Title / authors / upgraded date ********************** -->

<h2 id="main"> Demos for Interactive Scientific Website </h2>

<h3 class="center"> Chung-Lin Shan </h3>

<h6>
 Version: 1.4142 <br />
 Last upgraded: August 9, 2010
</h6>

<hr />

      .
      .          Template 53
      .

      .
      .          Template 2
      .

</body>

</html>
```

Modification

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

Modification

```
<meta http-equiv="Content-Type" content="text/html; charset=big5" />
```

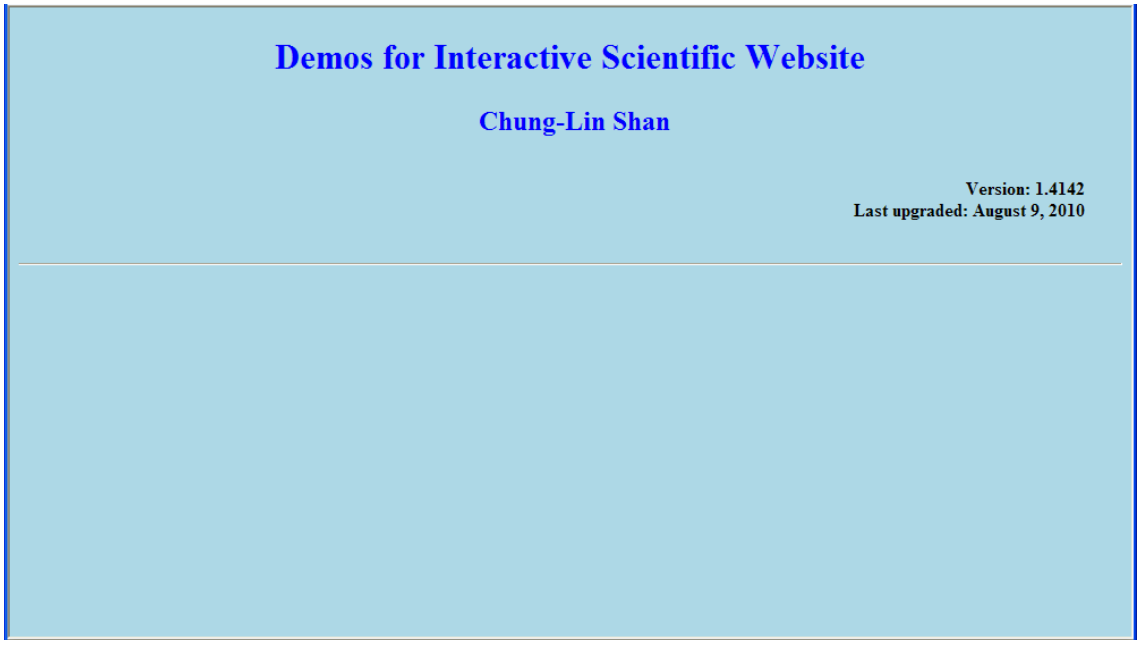


Figure 1: head and the headings.

1.2 form

Template 2: form

Script

```
<form action="main.php" method="post" enctype="multipart/form-data">

<!-- ******************************************************* -->
<!-- Choose one of the main functions ********************** -->

<h3> List of the main functions </h3>

<h4> Choose one of the main functions </h4>

<?php

      .
      .          Template 3
      .

?>

<h5> <a href="#main">Top</a> </h5>          <h2 id="main">, see Template 1

<hr />

<!-- ******************************************************* -->
<!-- ******************************************************* -->

<input type="submit" class="submit" value="Submit" />
<br />

</form>
```

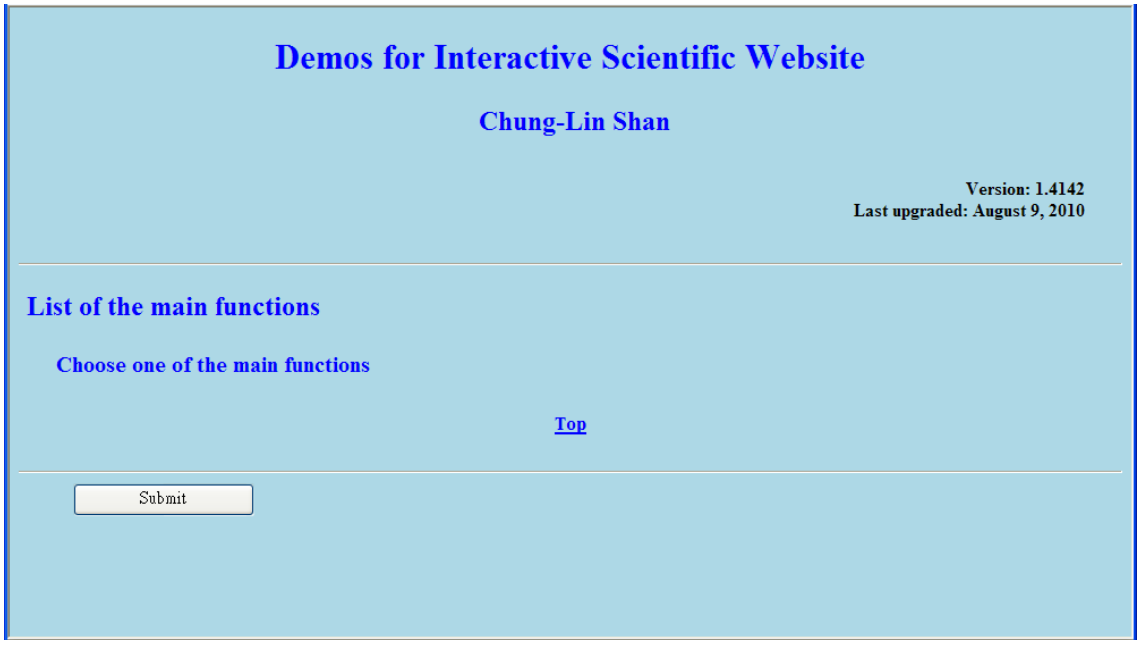


Figure 2: form.

Template 3: Choose one of the main functions

Script

```
<?php
  if ($main_function_choosing == NULL)
  {
    $main_function_choosing = $_POST["main_function_choosing"];
  }

  include("forms/form-main_functions.txt");                    Template 4

  if ($main_function_choosing == NULL)
  {
    include("default_choices/default-main_function_choosing.txt");    Template 5
  }

  else
  {
    echo '<br />';
    echo 'main_function_choosing = ' . $main_function_choosing . '<br />';
    echo 'main_function          = ' . $main_function          . '<br />';
  }
?>
```

Template 4: form-main_functions.txt

Script

```
<fieldset id="main_function_choosing" style="width: 210pt">

  <input type="radio" name="main_function_choosing" value="1"
         <?php
           if ($main_function_choosing == "1")
           {
             echo "checked";

             $main_function = "main_function_1";
           }
         ?>
         />

         Description for the main function 1
         <br />

            .
            .
            .

</fieldset>
```

Template 5: default-main_function_choosing.txt

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    document.getElementById("main_function_choosing").childNodes[0].checked = true;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    document.getElementById("main_function_choosing").childNodes[1].checked = true;
  }

  document.getElementById("main_function_choosing").style.borderColor = "red";
</script>
```

Figure 3a: Choose one of the main function (before submission).

Figure 3b: Choose one of the main function (after submission).

1.3 switch for the further step

Template 6: switch for the further step

Script

```
<?php
  if ($main_function != NULL)
  {
    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.appName == "Microsoft Internet Explorer")'    . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#mode-main_function";'                 . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

    include("main/title-main_functions.txt");          Template 7

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Firefox" ) != -1 || '       . "\r\n";
    echo '      navigator.userAgent.search("Safari"  ) != -1   )'       . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#mode-main_function";'                 . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

    switch ($main_function)
    {
        .
        .          Template 8
        .
    }

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Netscape") != -1)'          . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location.hash = "#mode-main_function";'            . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";
  }
?>

      .
      .
      .

<?php
  if ($main_function != NULL)
  {
    echo '<h5> <a href="#main">Top</a> </h5>' . "\r\n";          cf. Template 2
    echo '<hr />'                             . "\r\n";
  }
?>
```

Template 7: title-main_functions.txt

Script

```
<?php
  switch ($main_function)
  {
    case "main_function_1":

      echo '<h3 id="mode-main_function">'                                          . "\r\n";
      echo '  Description for the main function 1'                                 . "\r\n";
      echo '</h3>'                                                                 . "\r\n";

      echo '<h4> Choose one of the following mode for the main function 1 </h4>' . "\r\n";

      break;

        .
        .
        .

  }
?>
```

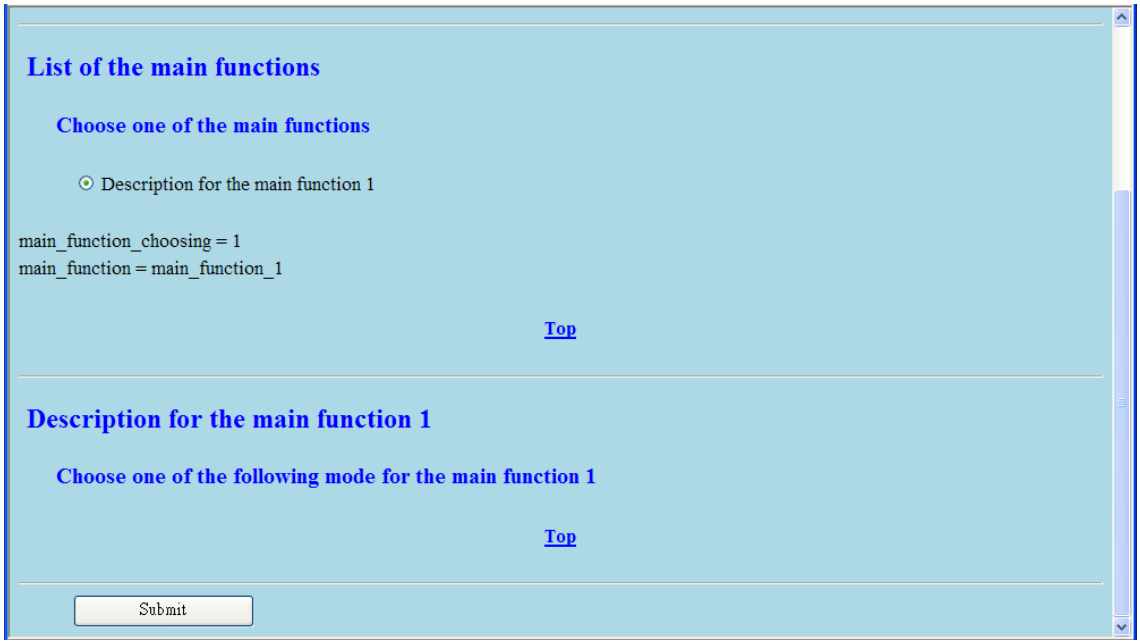


Figure 4: switch for the further step (cf. Figure 2).

Template 8: Choose the mode for the chosen function (cf. Template 3)

Script

```
<?php
  switch ($main_function)
  {
    /*********************************************************/
    /* Mode for the main function 1 **************************/

    case "main_function_1":

      if ($mode_main_function_1_choosing == NULL)
      {
        $mode_main_function_1_choosing = $_POST["mode_main_function_1_choosing"];
      }

      include("forms/form-modes_main_function_1.txt");          Modification of Template 4

      if ($mode_main_function_1_choosing == NULL)
      {
        include("default_choices/default-mode_main_function_1_choosing.txt");
      }
                                  Modification of Template 5
      else
      {
        echo '<br />';
        echo 'mode_main_function_1_choosing = ' . $mode_main_function_1_choosing . '<br />';
        echo 'mode_main_function_1_choice   = ' . $mode_main_function_1_choice   . '<br />';
        echo '<br />';

        $mode_checked = "yes";
      }

      break;

        .
        .
        .

  }
?>
```

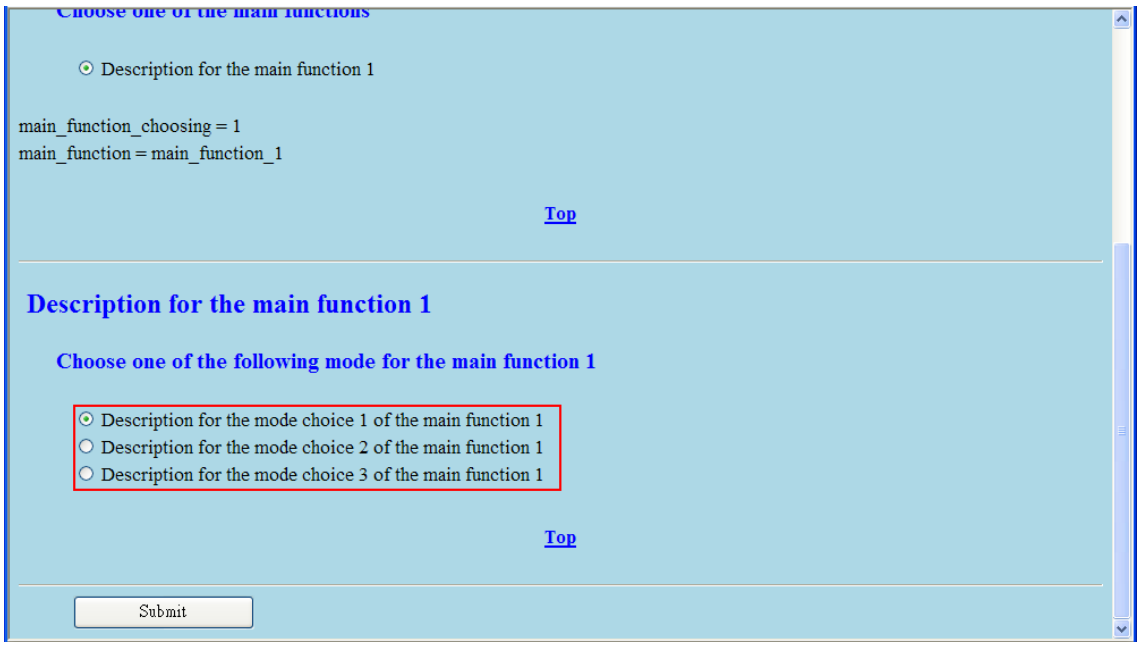


Figure 5a: Choose the mode for the chosen function (before submission, cf. Figure 3a).

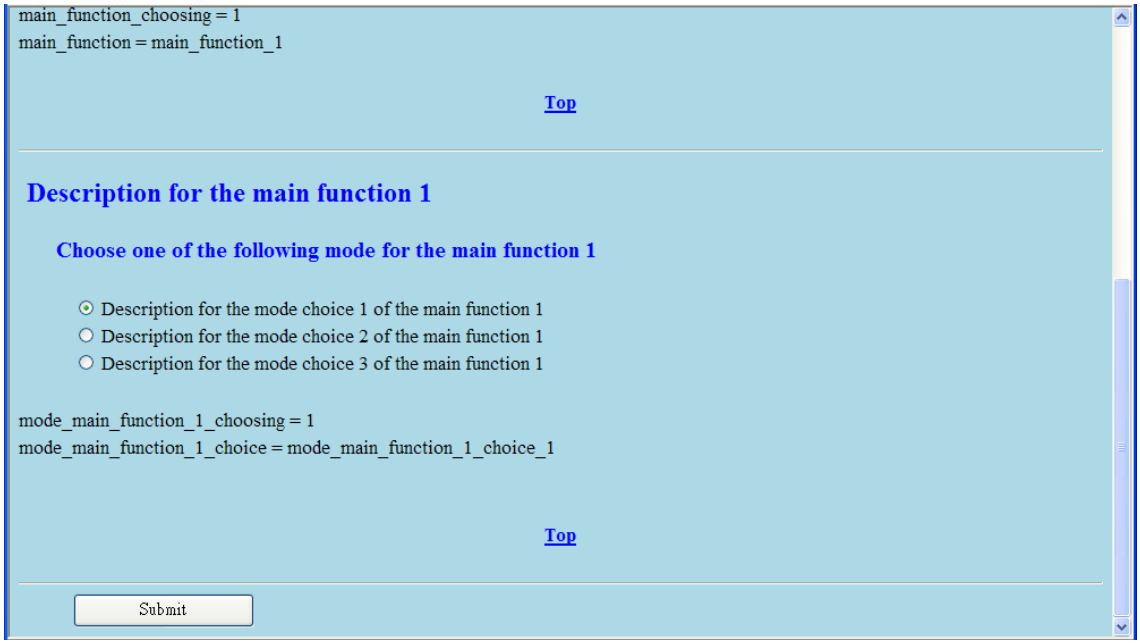


Figure 5b: Choose the mode for the chosen function (after submission, cf. Figure 3b).

1.4 input

Template 9: Modification of 'switch for the further step' (cf. Templates 6 and 7)

Script

```
<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes"   )
  {
    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.appName == "Microsoft Internet Explorer")'    . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#setup-main_function";'                . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

    echo '<h3 id="setup-main_function">'                                . "\r\n";
    echo '  Setup for the main function'                                . "\r\n";
    echo '</h3>'                                                        . "\r\n";

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Firefox" ) != -1 || '       . "\r\n";
    echo '      navigator.userAgent.search("Safari"  ) != -1   )'       . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#setup-main_function";'                . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

        .
        .          Template 10
        .

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Netscape") != -1)'          . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location.hash = "#setup-main_function";'           . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";
  }
?>

<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes"   )
  {
    echo '<h5> <a href="#main">Top</a> </h5>' . "\r\n";
    echo '<hr />'                             . "\r\n";
  }
?>
```

Template 10: Setup for the chosen function

Script

```
<?php
  if ($main_function == "main_function_1"  &&
      $mode_main_function_1_choice != NULL   )
  {
    echo '<h4> Setup for the main function 1 </h4>' . "\r\n";

    if ($setup_main_function_1_choosing == NULL)
    {
      $setup_main_function_1_choosing = $_POST["setup_main_function_1_choosing"];
    }

    if ($integer_1 == NULL)
    {
      $integer_1 = $_POST["integer_1"];
    }

    if ($integer_2 == NULL)
    {
      $integer_2 = $_POST["integer_2"];
    }

    if ($float_1_1 == NULL)
    {
      $float_1_1 = $_POST["float_1_1"];
    }

    if ($float_1_2 == NULL)
    {
      $float_1_2 = $_POST["float_1_2"];
    }

    if ($float_2_1 == NULL)
    {
      $float_2_1 = $_POST["float_2_1"];
    }

    if ($float_2_2 == NULL)
    {
      $float_2_2 = $_POST["float_2_2"];
    }

    if ($integer_3 == NULL)
    {
      $integer_3 = $_POST["integer_3"];
    }

    if ($float_3 == NULL)
    {
      $float_3 = $_POST["float_3"];
    }
```

```
    include("forms/form-setup_main_function_1_choosing.txt");

    if ($setup_main_function_1_choosing == NULL)
    {
      include("default_choices/default-setup_main_function_1_choosing.txt");
    }

    elseif ($setup_main_function_1_choosing == "5"                &&
            ($integer_1 == NULL                                   ||
             $integer_2 == NULL                                   ||
             ($mode_main_function_1_choosing == "2"      &&
              ($float_1_1 == NULL ||
               $float_1_2 == NULL   )                       ) ||
             ($mode_main_function_1_choosing == "3"      &&
              ($float_2_1 == NULL ||
               $float_2_2 == NULL   )                       ) ||
             (($mode_main_function_1_choosing == "2" ||
               $mode_main_function_1_choosing == "3"   ) &&
              ($integer_3 == NULL ||
               $float_3   == NULL   )                       )   )   )
    {
      echo '<script type="text/javascript">' . "\r\n";
      echo '  document.getElementById("';
      echo 'setup_main_function_1_choosing';
      echo '").style.borderColor = "red";'   . "\r\n";
      echo '</script>'                       . "\r\n";
    }

    else
    {
      echo '<br />';
      echo 'setup_main_function_1_choosing = ' . $setup_main_function_1_choosing . '<br />';
      echo '<br />';

      if ($setup_main_function_1_choosing == "5")
      {
        echo 'integer_1 = ' . $integer_1 . '<br />';
        echo 'integer_2 = ' . $integer_2 . '<br />';

        if ($mode_main_function_1_choosing == "2")
        {
          echo 'float_1_1 = ' . $float_1_1 . '<br />';
          echo 'float_1_2 = ' . $float_1_2 . '<br />';
        }

        if ($mode_main_function_1_choosing == "3")
        {
          echo 'float_2_1 = ' . $float_2_1 . '<br />';
          echo 'float_2_2 = ' . $float_2_2 . '<br />';
        }

        if ($mode_main_function_1_choosing == "2" ||
            $mode_main_function_1_choosing == "3"   )
        {
          echo 'integer_3 = ' . $integer_3 . '<br />';
          echo 'float_3   = ' . $float_3   . '<br />';
        }
      }

      $setup_main_function_1_checked = "yes";
    }
  }
?>
```

Template 11

Modification of Template 5

cf. Template 15

Template 11: form-setup_main_function_1_choosing.txt (cf. Template 4)

Script

```
<script type="text/javascript">
  function personal_setup_main_function_1_setting()
  {
    if (navigator.appName == "Microsoft Internet Explorer")
    {
      document.getElementById("setup_main_function_1_choosing").childNodes[12].checked = true;
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      document.getElementById("setup_main_function_1_choosing").childNodes[17].checked = true;
    }
  }
</script>

<fieldset id="setup_main_function_1_choosing" style="width: 320pt">

  <input type="radio" name="setup_main_function_1_choosing" value="1"
         <?php
           if ($setup_main_function_1_choosing == "1")
           {
             echo "checked";

             $setup_main_function_1_choice = "setup_main_function_1_choice_1";
           }
         ?>
         />

         Description for the setup choice 1 of the main function 1
         <br />

            .
            .
            .

  <input type="radio" name="setup_main_function_1_choosing" value="5"
         <?php
           if ($setup_main_function_1_choosing == "5")
           {
             echo "checked";

             $setup_main_function_1_choice = "personal_setup_main_function_1";
           }
         ?>
         />

         Personal setup for the main function 1:
         <br />
```

```
  <span style="margin-left: 18pt"> integer_1 = </span>
  <input class="table" type="text" name="integer_1"
         style="width: 60pt"
         onclick="personal_setup_main_function_1_setting()"      ⟺ <label for="...">
         <?php
           if ($setup_main_function_1_choosing == "5")
           {
             echo 'value="' . $integer_1 . '"';
           }
         ?>
         />,

  integer_2 =
  <input class="table" type="text" name="integer_2"
         style="width: 60pt"
         onclick="personal_setup_main_function_1_setting()"
         <?php
           if ($setup_main_function_1_choosing == "5")
           {
             echo 'value="' . $integer_2 . '"';
           }
         ?>
         />
         <br />

<?php
  if ($mode_main_function_1_choosing == "2")
  {
    echo '  <span style="margin-left: 18pt"> float_1_1 </span> ='      . "\r\n";
    echo '  <input class="table" type="text" name="float_1_1"'         . "\r\n";
    echo '         style="width: 60pt"'                                . "\r\n";
    echo '         onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $float_1_1 . '"'                      . "\r\n";
    }
    echo '         />,'                                                . "\r\n".
                                                                         "\r\n";
    echo '  float_1_2 ='                                               . "\r\n";
    echo '  <input class="table" type="text" name="float_1_2"'         . "\r\n";
    echo '         style="width: 60pt"'                                . "\r\n";
    echo '         onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $float_1_2 . '"'                      . "\r\n";
    }
    echo '         />'                                                 . "\r\n".
                                                                         "\r\n";
  }
?>
```

```
<?php
  if ($mode_main_function_1_choosing == "3")
  {
    echo '  <span style="margin-left: 18pt"> float_2_1 </span> ='      . "\r\n";
    echo '  <input class="table" type="text" name="float_2_1"'         . "\r\n";
    echo '          style="width: 60pt"'                               . "\r\n";
    echo '          onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $float_2_1 . '"'                      . "\r\n";
    }
    echo '          />,'                                               . "\r\n".
                                                                         "\r\n";
    echo '  float_2_2 ='                                               . "\r\n";
    echo '  <input class="table" type="text" name="float_2_2"'         . "\r\n";
    echo '          style="width: 60pt"'                               . "\r\n";
    echo '          onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $float_2_2 . '"'                      . "\r\n";
    }
    echo '          />'                                                . "\r\n".
                                                                         "\r\n";
  }
?>

<?php
  if ($mode_main_function_1_choosing == "2" ||
      $mode_main_function_1_choosing == "3"   )
  {
    echo '          <br />'                                            . "\r\n";

    echo '  <span style="margin-left: 18pt"> integer_3 </span> ='      . "\r\n";
    echo '  <input class="table" type="text" name="integer_3"'         . "\r\n";
    echo '          style="width: 60pt"'                               . "\r\n";
    echo '          onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $integer_3 . '"'                      . "\r\n";
    }
    echo '          />,'                                               . "\r\n".
                                                                         "\r\n";
    echo '  float_3 ='                                                 . "\r\n";
    echo '  <input class="table" type="text" name="float_3"'           . "\r\n";
    echo '          style="width: 60pt"'                               . "\r\n";
    echo '          onclick="personal_setup_main_function_1_setting()"' . "\r\n";
    if ($setup_main_function_1_choosing == "5")
    {
      echo '          value="' . $float_3 . '"'                        . "\r\n";
    }
    echo '          />'                                                . "\r\n";
    echo '          <br />';
  }
?>

</fieldset>
```

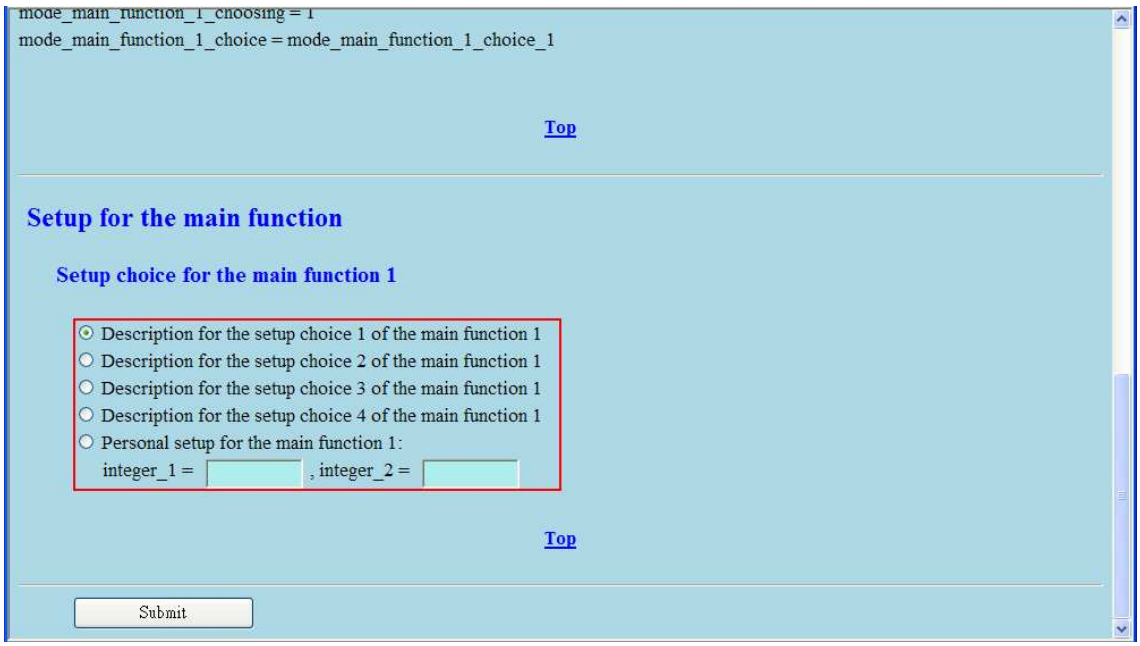


Figure 6a: Setup for the chosen function (before submission).

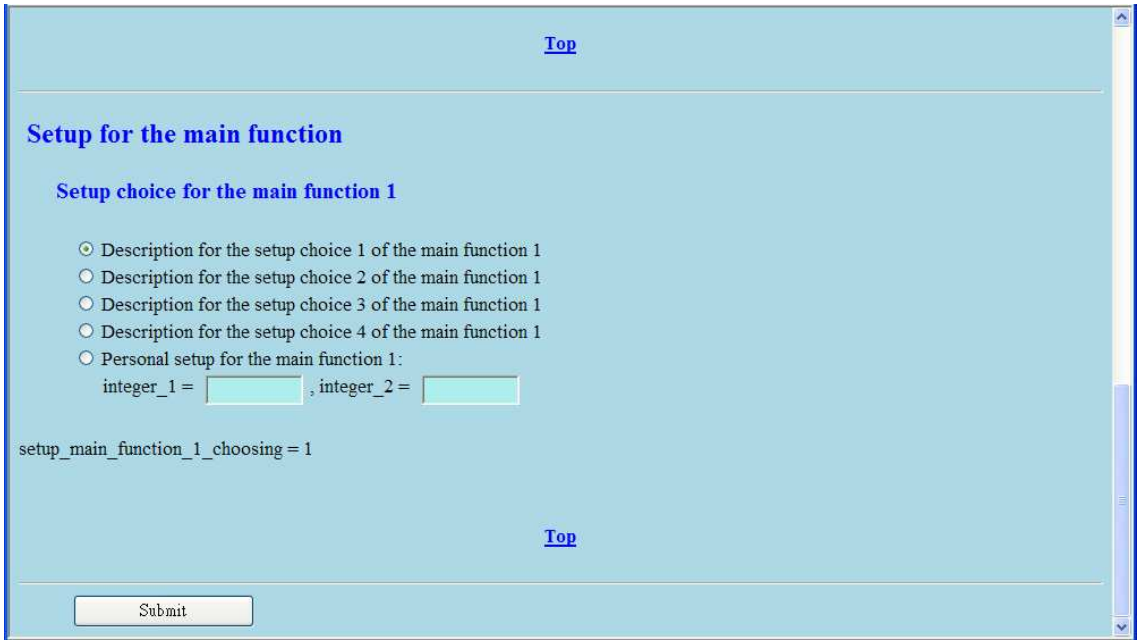


Figure 6b: Setup for the chosen function (after submission).

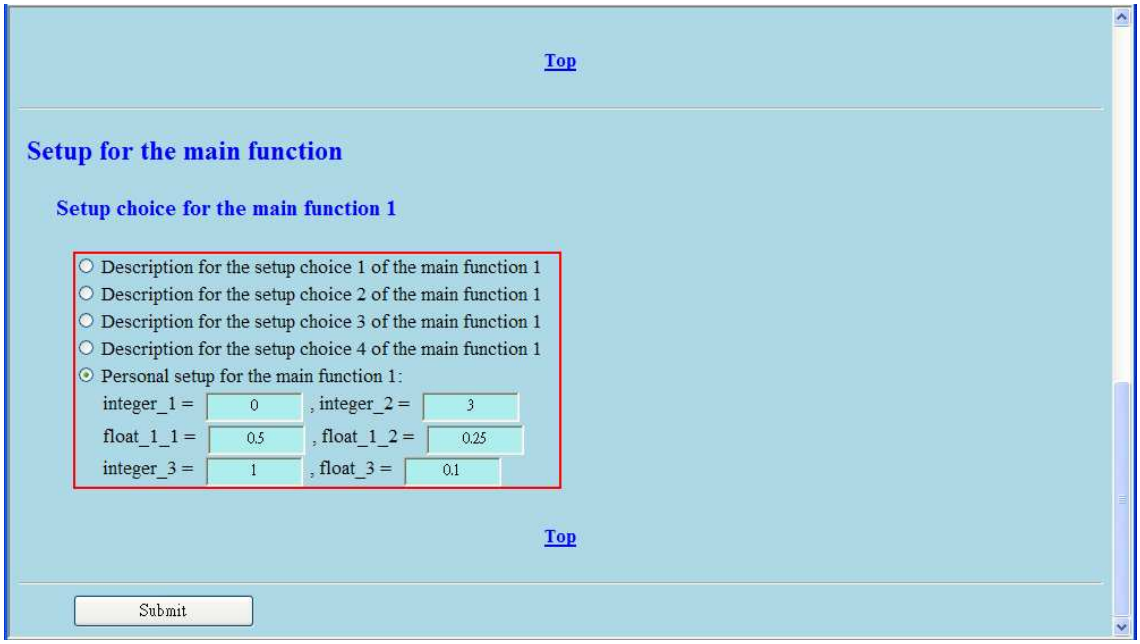


Figure 6c: Setup for the chosen function with `$mode_main_function_1_choosing = "2"` (before submission).

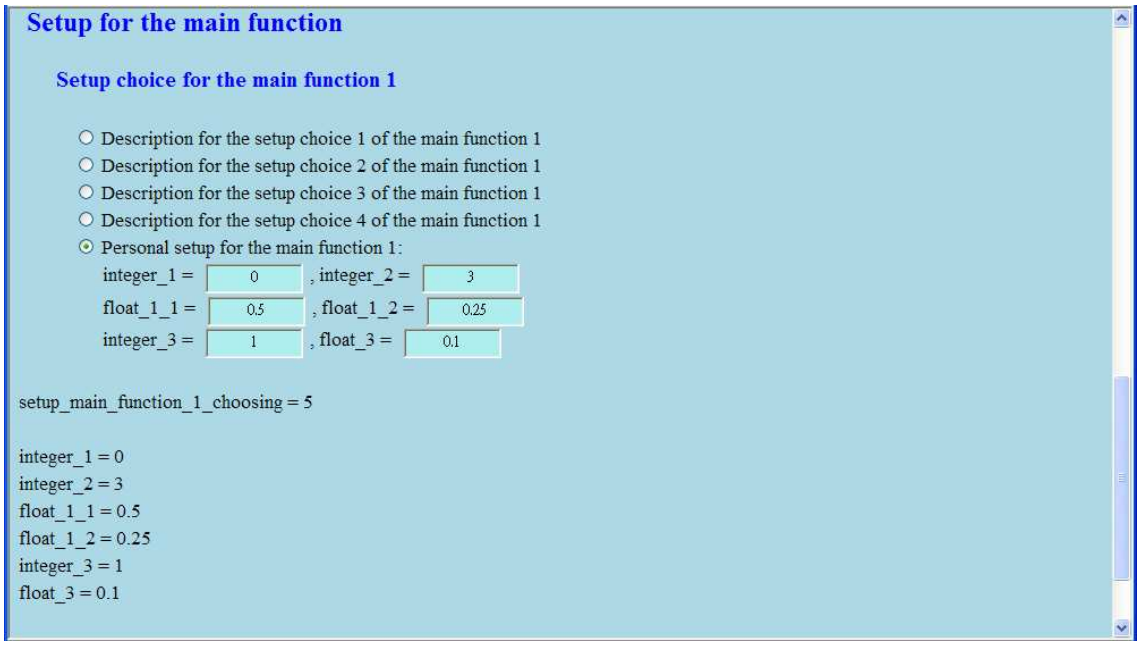


Figure 6d: Setup for the chosen function with `$mode_main_function_1_choosing = "2"` (after submission).

Template 12: Modification of form-setup_main_function_1_choosing.txt (cf. Template 11)

Script

```
<script type="text/javascript">
  function personal_setup_main_function_1_setting()
  {
        .
        .
        .
  }
</script>

<fieldset id="setup_main_function_1_choosing" style="width: 320pt">

        .
        .
        .

  <input type="radio" name="setup_main_function_1_choosing" value="5"
         <?php
           if ($setup_main_function_1_choosing == "5")
           {
             echo "checked";

             $setup_main_function_1_choice = "personal_setup_main_function_1";
           }
         ?>
         />

         Personal setup for the main function 1:
         <br />

  <span style="margin-left: 18pt"> integer_1 = </span>
  <select name="integer_1"
          onclick="personal_setup_main_function_1_setting()">

    <option value="nn"
            <?php
              if ($setup_main_function_1_choosing == "5" &&
                  $integer_1 == nn                          )
              {
                echo "selected";      ⟺ checked
              }
            ?>
            >     nn
    </option>

    <option value="nn"
            <?php
              if ($setup_main_function_1_choosing == "5" &&
                  $integer_1 == nn                          )
              {
                echo "selected";
              }
            ?>
            >     nn
    </option>

        .
        .
        .

  </select>,
```

```
  integer_2 =
  <select name="integer_2"
          onclick="personal_setup_main_function_1_setting()">

    <option value="nn"
            <?php
              if ($setup_main_function_1_choosing == "5" &&
                  $integer_2 == nn                          )
              {
                echo "selected";
              }
            ?>
            >     nn
    </option>

    <option value="nn"
            <?php
              if ($setup_main_function_1_choosing == "5" &&
                  $integer_2 == nn                          )
              {
                echo "selected";
              }
            ?>
            >     nn
    </option>

          .
          .
          .

  </select>

        .
        .
        .

<?php
  if ($mode_main_function_1_choosing == "2")
  {
        .
        .
        .
  }

  if ($mode_main_function_1_choosing == "3")
  {
        .
        .
        .
  }

  if ($mode_main_function_1_choosing == "2" ||
      $mode_main_function_1_choosing == "3"   )
  {
        .
        .
        .
  }
?>

</fieldset>
```

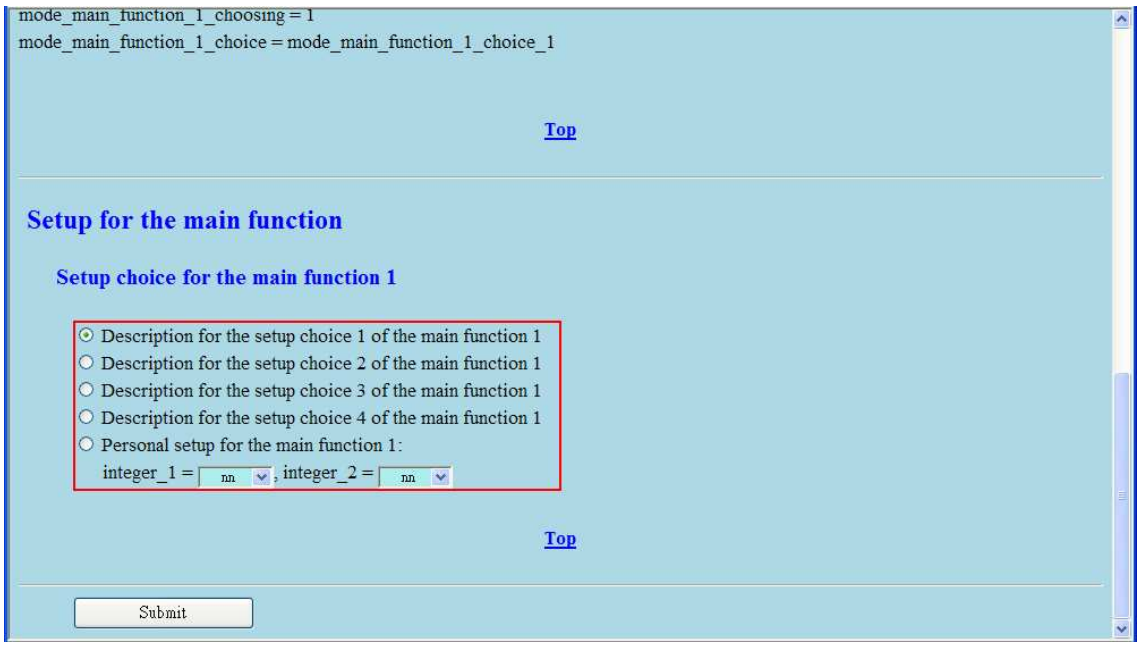


Figure 7a: Modification of form-setup_main_function_1_choosing.txt (cf. Figure 6a).

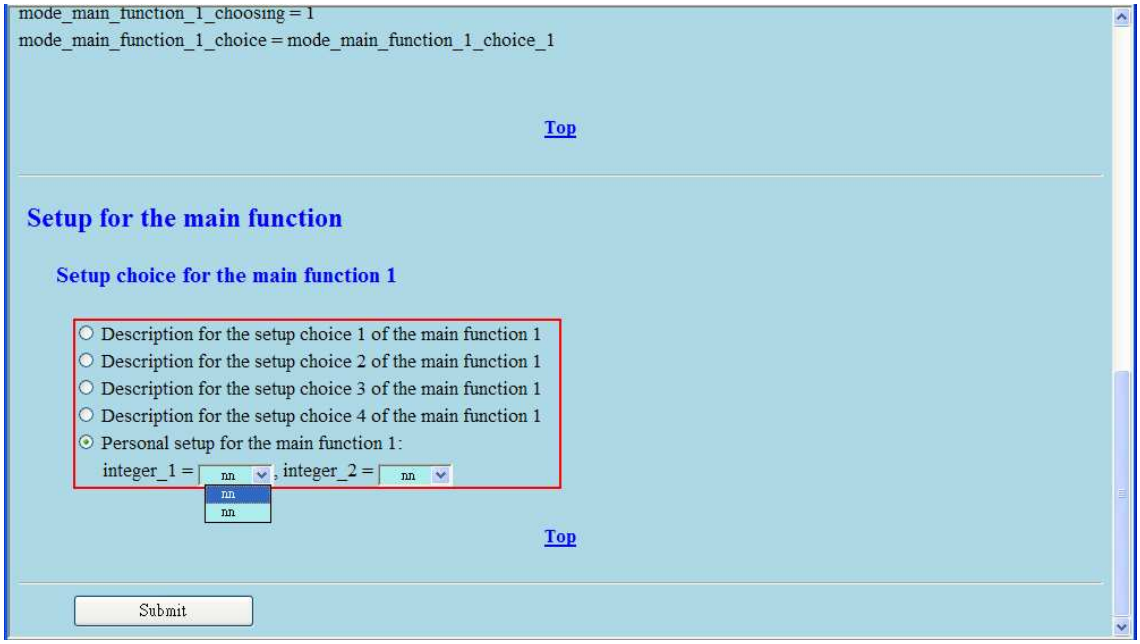


Figure 7b: Modification of form-setup_main_function_1_choosing.txt (cf. Figure 6c).

1.5 table

Template 13: table-setup_item.txt

Script

```
<table id="table-setup_item" border="1">

  <tr id="setup_item">

    <th> setup_item_1 </th>
    <th> setup_item_2 </th>
    <th> setup_item_3 </th>
    <th> setup_item_4 </th>
    <th> setup_item_5 </th>

  </tr>

  <tr>

    <td>
      <input class="table" type="text" name="setup_item_1"
             onclick="this.value=''"
             <?php if ($setup_item_1 != NULL) {echo 'value="' . $setup_item_1 . '"';} ?>
             />
    </td>

    <td>
      <input class="table" type="text" name="setup_item_2"
             onclick="this.value=''"
             <?php if ($setup_item_2 != NULL)
                   {
                     if ($setup_item_2 <= setup_item_2_max)
                     {
                       echo 'value="' . $setup_item_2 . '"';
                     }
                     else
                     {
                       echo 'value="setup_item_2_max"';
                     }
                   }
             ?>
             />
    </td>

    <td>
      <input class="table" type="text" name="setup_item_3"
             onclick="this.value=''"
             <?php     if ($setup_item_3 == 0.00001) {echo 'value="0"';}
                   elseif ($setup_item_3 != NULL)    {echo 'value="' . $setup_item_3 . '"';} ?>
             />
    </td>

       .
       .
       .

  </tr>

</table>
```

See Templates 51 and 52

See also Template 15.

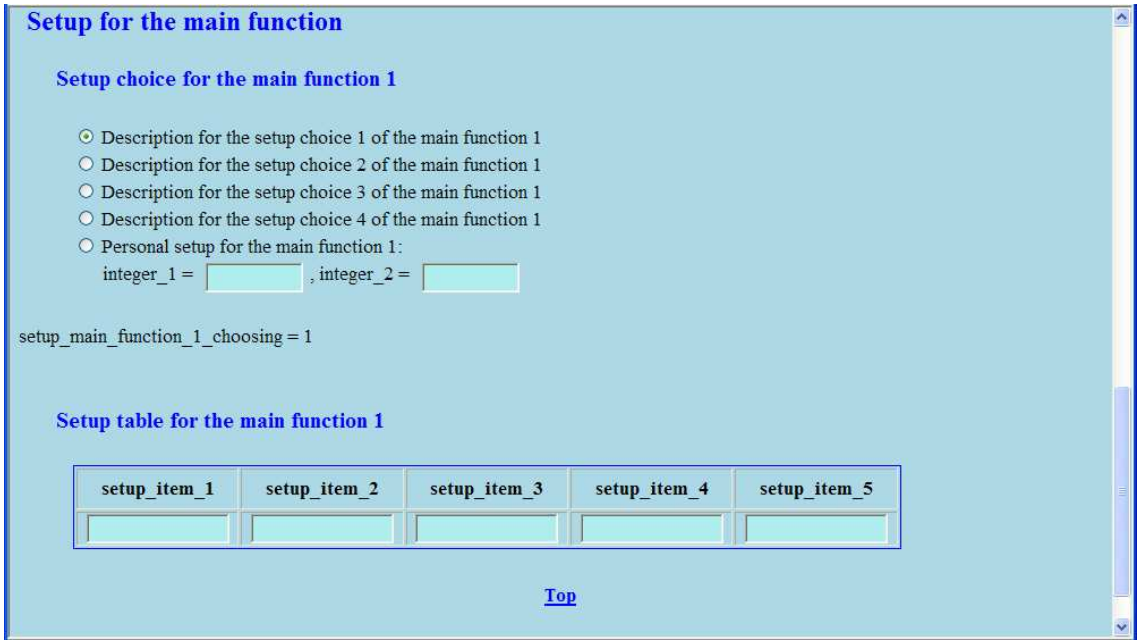


Figure 8: A setup table.

Template 14: default-setup_item.txt

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    var setup_item_row = document.getElementById("setup_item").nextSibling;

    setup_item_row.childNodes[0].childNodes[0].value = "nn";

    setup_item_row.childNodes[1].childNodes[0].value = "nn";
    setup_item_row.childNodes[2].childNodes[0].value = "ff.ffff";

    setup_item_row.childNodes[3].childNodes[0].value = "ff.ffff";
    setup_item_row.childNodes[4].childNodes[0].value = "ff.ffff";
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    var setup_item_row = document.getElementById("setup_item").nextSibling.nextSibling;

    setup_item_row.childNodes[1].childNodes[1].value = "nn";

    setup_item_row.childNodes[3].childNodes[1].value = "nn";
    setup_item_row.childNodes[5].childNodes[1].value = "ff.ffff";

    setup_item_row.childNodes[7].childNodes[1].value = "ff.ffff";
    setup_item_row.childNodes[9].childNodes[1].value = "ff.ffff";
  }

  document.getElementById("table-setup_item").style.borderColor = "red";
  document.getElementById("table-setup_item").border = "2";
</script>
```

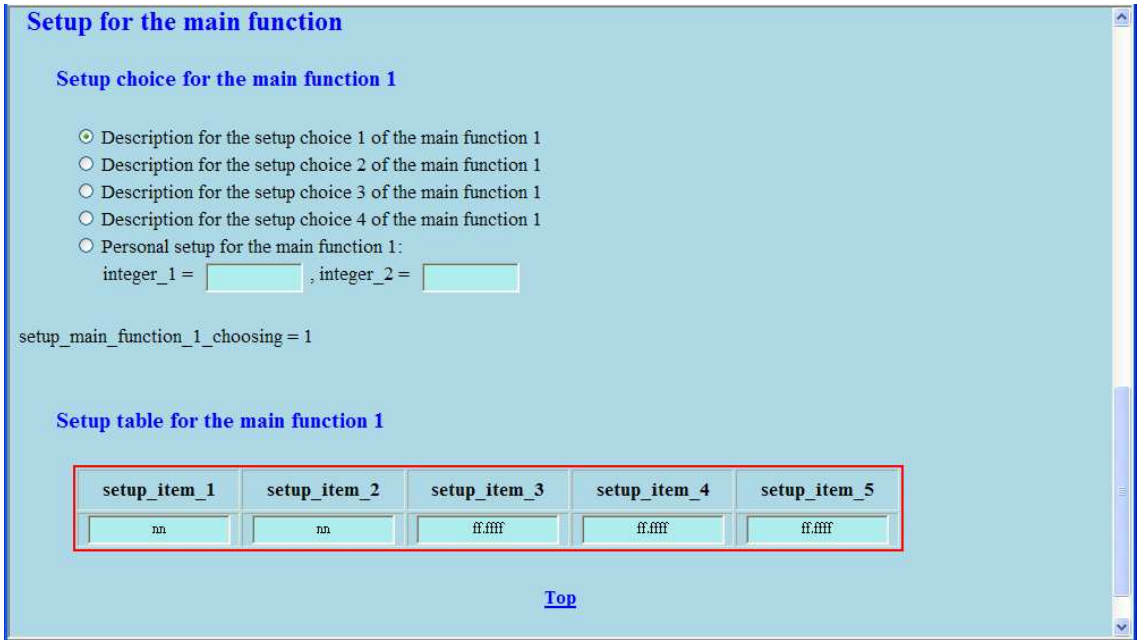


Figure 9: A setup table with default values (cf. Figure 8).

Template 15: Setup table for a group of entry (cf. Template 10)

Script

```
<?php
  if ($setup_main_function_1_checked == "yes")
  {
    echo '<h4> Setup table for the main function 1 </h4>' . "\r\n";

    $entry_No = 3;

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      if ($setup_item_1[$n_entry] == NULL)
      {
        $setup_item_1[$n_entry] = $_POST["setup_item_1"][$n_entry];
      }

      if ($setup_item_2[$n_entry] == NULL)
      {
        $setup_item_2[$n_entry] = $_POST["setup_item_2"][$n_entry];
      }

      if ($setup_item_3[$n_entry] == NULL)
      {
        $setup_item_3[$n_entry] = $_POST["setup_item_3"][$n_entry];
      }

      if ($setup_item_4[$n_entry] == NULL)
      {
        $setup_item_4[$n_entry] = $_POST["setup_item_4"][$n_entry];
      }
    }

    if ($setup_entry_common == NULL)
    {
      $setup_entry_common = $_POST["setup_entry_common"];
    }
```

```
    include("tables/table-setup_item_head.txt");
    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      include("tables/table-setup_item_entry.txt");
    }
    include("tables/table-setup_item_entry_common.txt");
    echo '</table>' . "\r\n";

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      if ($setup_item_1[$n_entry] == NULL ||
          $setup_item_2[$n_entry] == NULL ||
          $setup_item_3[$n_entry] == NULL ||
          $setup_item_4[$n_entry] == NULL ||
          $setup_entry_common     == NULL   )
      {
        include("default_choices/default-setup_item_head.txt");
        for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
        {
          include("default_choices/default-setup_item_entry.txt");
        }
        include("default_choices/default-setup_item_entry_common.txt");

        break;
      }

      else
      {
        echo '<br />';
        echo 'setup_item_1[' . $n_entry . '] = ' . $setup_item_1[$n_entry] . '<br />';
        echo 'setup_item_2[' . $n_entry . '] = ' . $setup_item_2[$n_entry] . '<br />';
        echo 'setup_item_3[' . $n_entry . '] = ' . $setup_item_3[$n_entry] . '<br />';
        echo 'setup_item_4[' . $n_entry . '] = ' . $setup_item_4[$n_entry] . '<br />';
      }

      if ($n_entry == $entry_No)
      {
        echo '<br />';
        echo 'setup_entry_common =             ' . $setup_entry_common     . '<br />';
        echo '<br />';

        $setup_item_checked = "yes";
      }
    }
  }
?>
```

Template 16

Template 17

Template 18

Template 19

Template 20

Template 21

cf. Template 10

Template 16: table-setup_item_head.txt (cf. Template 13)

Script

```
<table id="table-setup_item" border="1">

  <tr id="setup_item">

    <th style="width: 60pt"> entry </th>

    <th> setup_item_1 </th>
    <th> setup_item_2 </th>
    <th> setup_item_3 </th>
    <th> setup_item_4 </th>

  </tr>
```

Template 17: table-setup_item_entry.txt (cf. Template 13)

Script

```
<tr>

  <th style="width: 60pt">
    <?php echo 'entry[' . $n_entry . ']'; ?>
  </th>

  <td>
    <input class="table" type="text" name="setup_item_1[<?php echo $n_entry; ?>]"
           onclick="this.value=''"
           <?php
             if ($setup_item_1[$n_entry] != NULL)
             {
               echo 'value="' . $setup_item_1[$n_entry] . '"';
             }
           ?>
           />
  </td>

  <td>
    <input class="table" type="text" name="setup_item_2[<?php echo $n_entry; ?>]"
           onclick="this.value=''"
           <?php
             if ($setup_item_2[$n_entry] != NULL)
             {
               if ($setup_item_2[$n_entry] <= $setup_item_2_max)
               {
                 echo 'value="' . $setup_item_2[$n_entry] . '"';
               }
               else
               {
                 echo 'value="' . $setup_item_2_max . '"';
               }
             }
           ?>
           />
  </td>

  <td>
    <input class="table" type="text" name="setup_item_3[<?php echo $n_entry; ?>]"
           onclick="this.value=''"
           <?php
             if ($setup_item_3[$n_entry] == 0.00001)
             {
               echo 'value="0"';
             }
             elseif ($setup_item_3[$n_entry] != NULL)
             {
               echo 'value="' . $setup_item_3[$n_entry] . '"';
             }
           ?>
           />
  </td>

  <td>
    <input class="table" type="text" name="setup_item_4[<?php echo $n_entry; ?>]"
           .
           .
           .
  </td>

</tr>
```

Template 18: table-setup_item_entry_common.txt (cf. Template 13)

Script

```
<tr>

  <td style="width: 60pt; border-right-style: none">
    <input class="table" type="text" name="setup_entry_common" style="width: 50pt"
           onclick="this.value=''"
           <?php
             if ($setup_entry_common != NULL)
             {
               if ($setup_entry_common <= $setup_entry_common_max)
               {
                 echo 'value="' . $setup_entry_common     . '"';
               }
               else
               {
                 echo 'value="' . $setup_entry_common_max . '"';
               }
             }
           ?>
           />
  </td>

  <th colspan="4" style="text-align: left; border-left-style: none">
      unit of setup_entry_common (max. setup_entry_common_max)
  </th>

</tr>
```

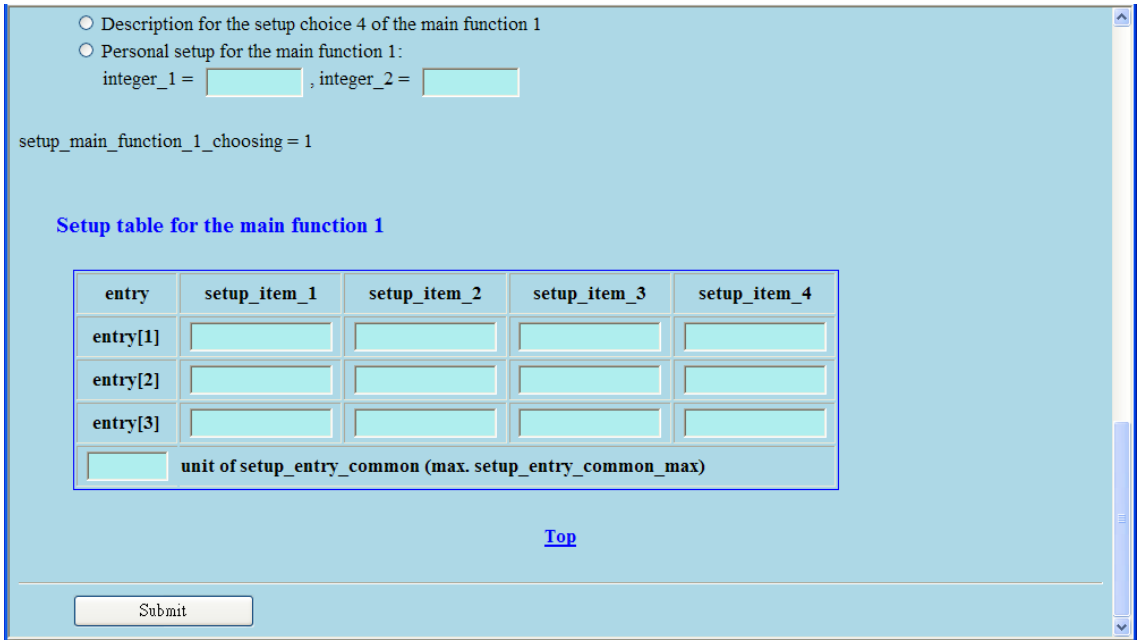


Figure 10: A setup table for a group of entry (cf. Figure 8).

Template 19: default-setup_item_head.txt (cf. Template 14)

Script

```
<script type="text/javascript">
  document.getElementById("table-setup_item").style.borderColor = "red";
  document.getElementById("table-setup_item").border = "2";

  if (navigator.appName == "Microsoft Internet Explorer")
  {
    var n_Entry = document.getElementById("setup_item").nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    var n_Entry = document.getElementById("setup_item").nextSibling.nextSibling;
  }
</script>
```

Template 20: default-setup_item_entry.txt (cf. Template 14)

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    n_Entry.childNodes[1].childNodes[0].value =
    <?php
      if ($main_function == "main_function_1")
      {
        echo '"nn"';
      }
      else
      {
        echo '"nn"';
      }
    ?>;

    n_Entry.childNodes[2].childNodes[0].value =
    <?php
      if ($n_entry == 1)
      {
        if ($main_function == "main_function_1"   &&
            $mode_main_function_1_choosing == "1"   )
        {
          echo '"nn"';
        }
        else
        {
          echo '"nn"';
        }
      }

      elseif ($n_entry == 2 ||
              $n_entry == 3   )
      {
        if ($main_function == "main_function_1"        &&
            ($mode_main_function_1_choosing == "2" ||
             $mode_main_function_1_choosing == "3"   )   )
        {
          echo '"nn"';
        }
        else
        {
          echo '"nn"';
        }
      }

      else
      {
        echo '"nn"';
      }
    ?>;

    n_Entry.childNodes[3].childNodes[0].value = "ff.ffff";

    n_Entry.childNodes[4].childNodes[0].value = "ff.ffff";

    n_Entry = n_Entry.nextSibling;
  }
```

```
  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    n_Entry.childNodes[3].childNodes[1].value =
    <?php
      if ($main_function == "main_function_1")
      {
        echo '"nn"';
      }
      else
      {
        echo '"nn"';
      }
    ?>;

    n_Entry.childNodes[5].childNodes[1].value =
    <?php
      if ($n_entry == 1)
      {
        if ($main_function == "main_function_1"   &&
            $mode_main_function_1_choosing == "1"   )
        {
          echo '"nn"';
        }
        else
        {
          echo '"nn"';
        }
      }

      elseif ($n_entry == 2 ||
              $n_entry == 3   )
      {
        if ($main_function == "main_function_1"        &&
            ($mode_main_function_1_choosing == "2" ||
             $mode_main_function_1_choosing == "3"   )   )
        {
          echo '"nn"';
        }
        else
        {
          echo '"nn"';
        }
      }

      else
      {
        echo '"nn"';
      }
    ?>;

    n_Entry.childNodes[7].childNodes[1].value = "ff.ffff";

    n_Entry.childNodes[9].childNodes[1].value = "ff.ffff";

    n_Entry = n_Entry.nextSibling.nextSibling;
  }
</script>
```

Template 21: default-setup_item_entry_common.txt (cf. Template 14)

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    n_Entry.childNodes[0].childNodes[0].value = "nn";

    n_Entry = n_Entry.nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    n_Entry.childNodes[1].childNodes[1].value = "nn";

    n_Entry = n_Entry.nextSibling.nextSibling;
  }
</script>
```

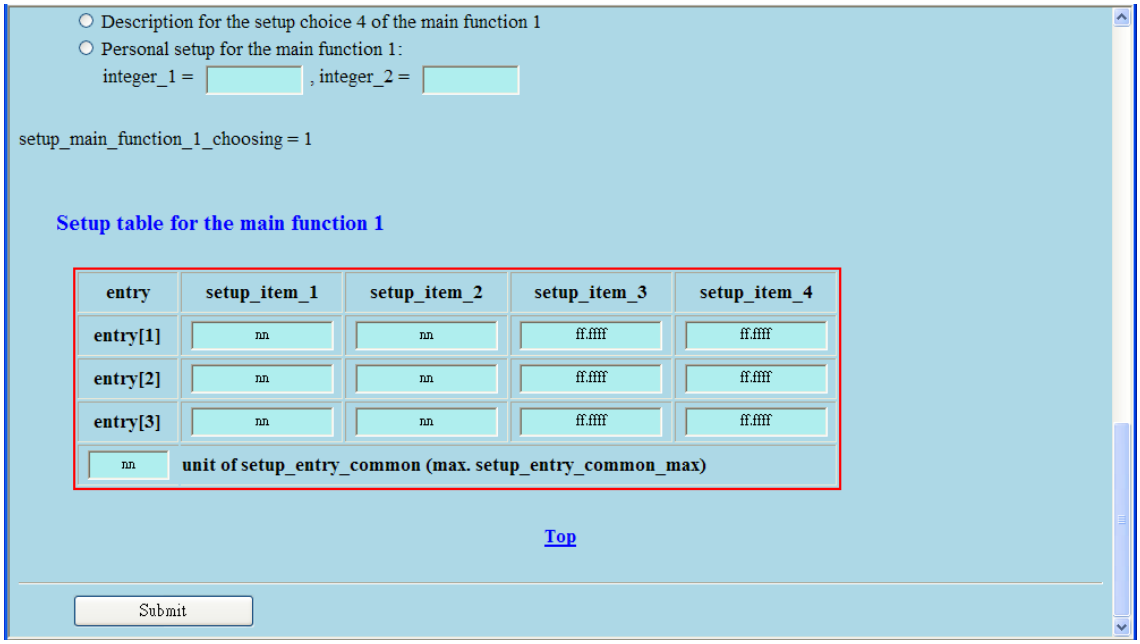


Figure 11a: A setup table for a group of entry with default values (before submission, cf. Figures 9 and 10).

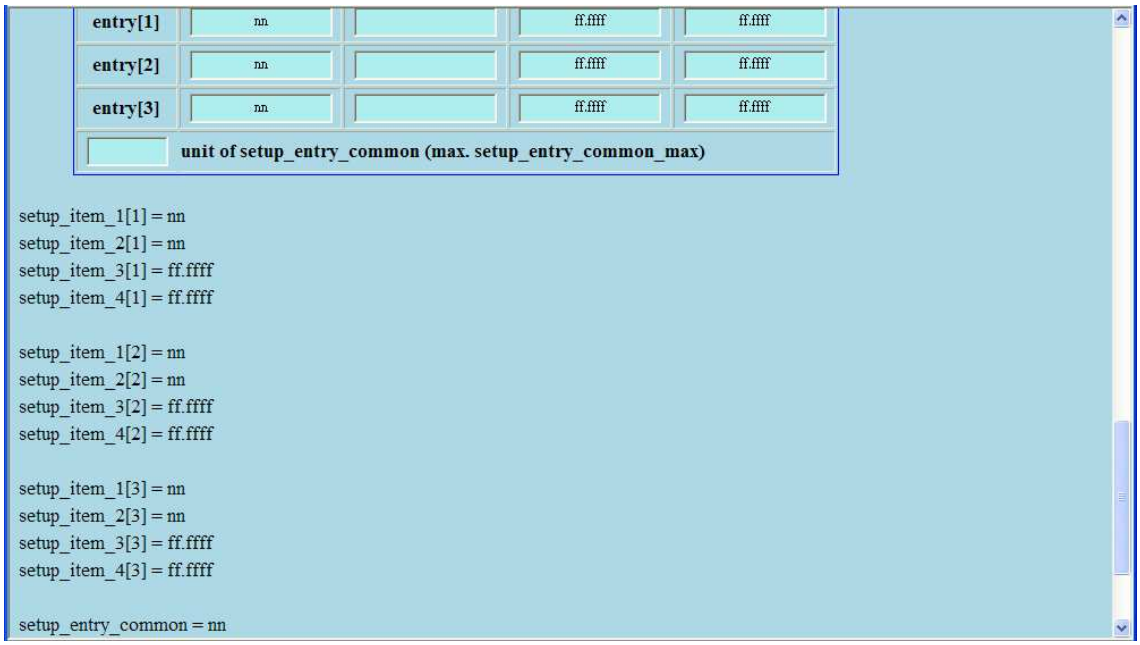


Figure 11b: A setup table for a group of entry with default values (after submission, cf. Figures 9 and 10).

Chapter 2

File Handling

2.1 Unique file name generating

Template 22: Keeping the generated name when reloading the current page (cf. Template 23)

Script

```
<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes"   )
  {
    /* Generate an unique file name for uploaded files ********/
    /* File name will be kept                          ********/
    /* when the user "re-submits"                      ********/
    /* as well as "reloads" the page                   ********/

    $personal_file_folder = "tmp/uploaded_files";

    if ($personal_file_date == NULL ||
        $personal_file_time == NULL   )
    {
      $personal_file_date = $_POST["personal_file_date"];
      $personal_file_time = $_POST["personal_file_time"];
    }

    if ($_POST["personal_file_date"] == NULL ||
        $_POST["personal_file_time"] == NULL   )          The first time
    {
      if ($personal_file_date == NULL ||
          $personal_file_time == NULL   )
      {
        $personal_file_date = gmdate(y) . gmdate(m) . gmdate(d);
        $personal_file_time = gmdate(H) . gmdate(i) . gmdate(s);
      }
    }

    echo '<input type="hidden"'                          . "\r\n";
    echo '       name="personal_file_date"'              . "\r\n";
    echo '       value="' . $personal_file_date . '"'    . "\r\n";
    echo '       />'                                     . "\r\n";
                                                                    Submit the fixed date/time
    echo '<input type="hidden"'                          . "\r\n";
    echo '       name="personal_file_time"'              . "\r\n";
    echo '       value="' . $personal_file_time . '"'    . "\r\n";
    echo '       />'                                     . "\r\n";

    echo 'personal_file_date   = ' . $personal_file_date   . '<br />';
    echo 'personal_file_time   = ' . $personal_file_time   . '<br />';
    echo 'personal_file_folder = ' . $personal_file_folder . '<br />';
  }
?>
```

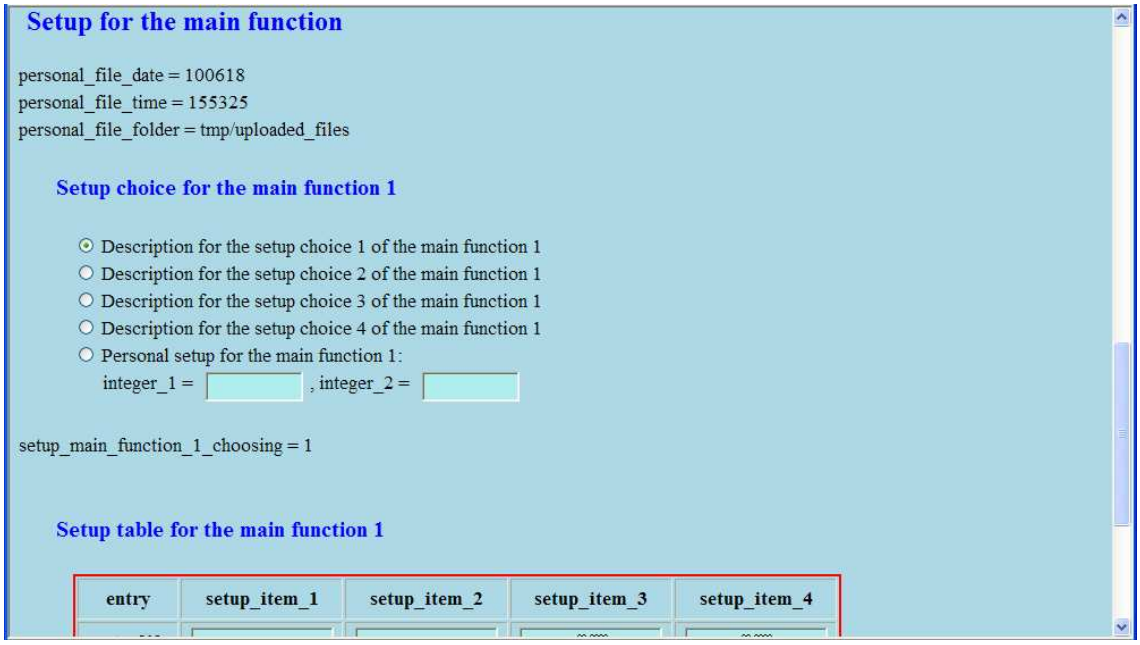


Figure 12: Keeping the generated name when reloading the current page.

Template 23: Changing the generated name when reloading the current page (cf. Template 22)

Script

```
<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes" &&
      $setup_checked == "yes"   )
  {
    /* Generate an unique file name for output plots **********/
    /* File name                                      ********/
    /* will be changed when the user "re-submits",      ******/
    /* while will be kept when the user "reloads" the page ****/

    $plot_output_folder = "tmp/output_plots";

    if ($plot_output_date == NULL ||
        $plot_output_time == NULL   )
    {
      $plot_output_date = $_POST["plot_output_date"];
      $plot_output_time = $_POST["plot_output_time"];
    }

      $plot_output_file
    = "plot-" .  $plot_output_date .  "-" .  $plot_output_time;

    $plot_output_date_tmp = gmdate(y) . gmdate(m) . gmdate(d);
    $plot_output_time_tmp = gmdate(H) . gmdate(i) . gmdate(s);

    echo '<input type="hidden"'                          . "\r\n";
    echo '       name="plot_output_date"'                . "\r\n";
    echo '       value="' . $plot_output_date_tmp . '"'  . "\r\n";
    echo '       />'                                     . "\r\n";

    echo '<input type="hidden"'                          . "\r\n";
    echo '       name="plot_output_time"'                . "\r\n";
    echo '       value="' . $plot_output_time_tmp . '"'  . "\r\n";
    echo '       />'                                     . "\r\n";

    echo 'plot_output_date     = ' . $plot_output_date     . '<br />';
    echo 'plot_output_date_tmp = ' . $plot_output_date_tmp . '<br />';

    echo 'plot_output_time     = ' . $plot_output_time     . '<br />';
    echo 'plot_output_time_tmp = ' . $plot_output_time_tmp . '<br />';

    echo '<br />';
    echo 'plot_output_folder   = ' . $plot_output_folder   . '<br />';
    echo 'plot_output_file     = ' . $plot_output_file     . '<br />';
  }
?>
```

Generate new date/time

Submit the new date/time

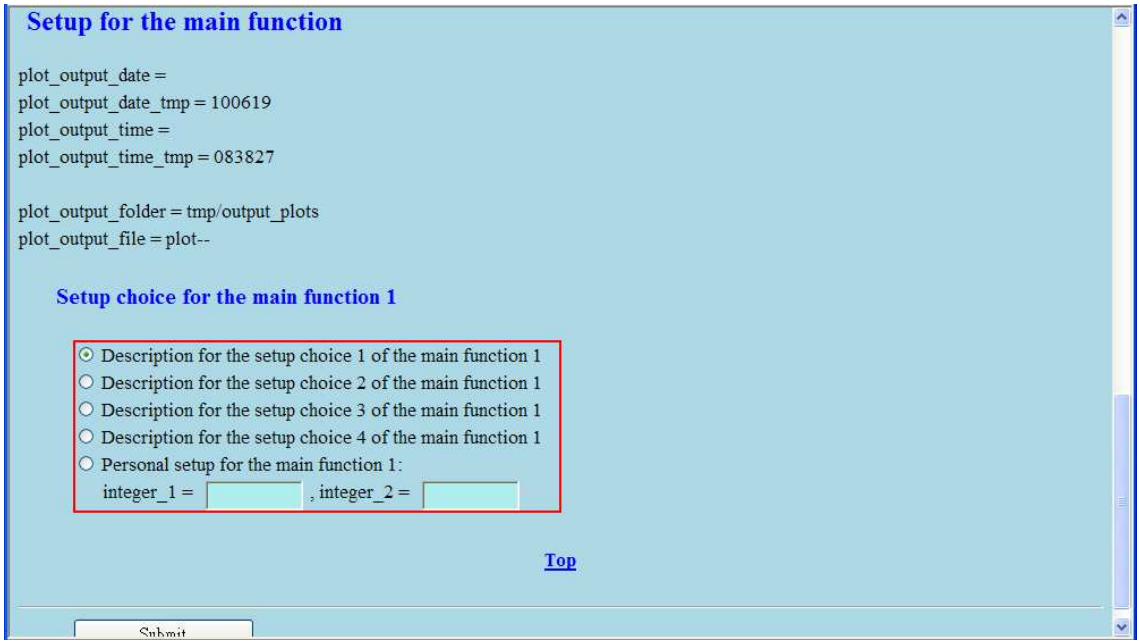


Figure 13a: Changing the generated name when reloading the current page (generating the name).

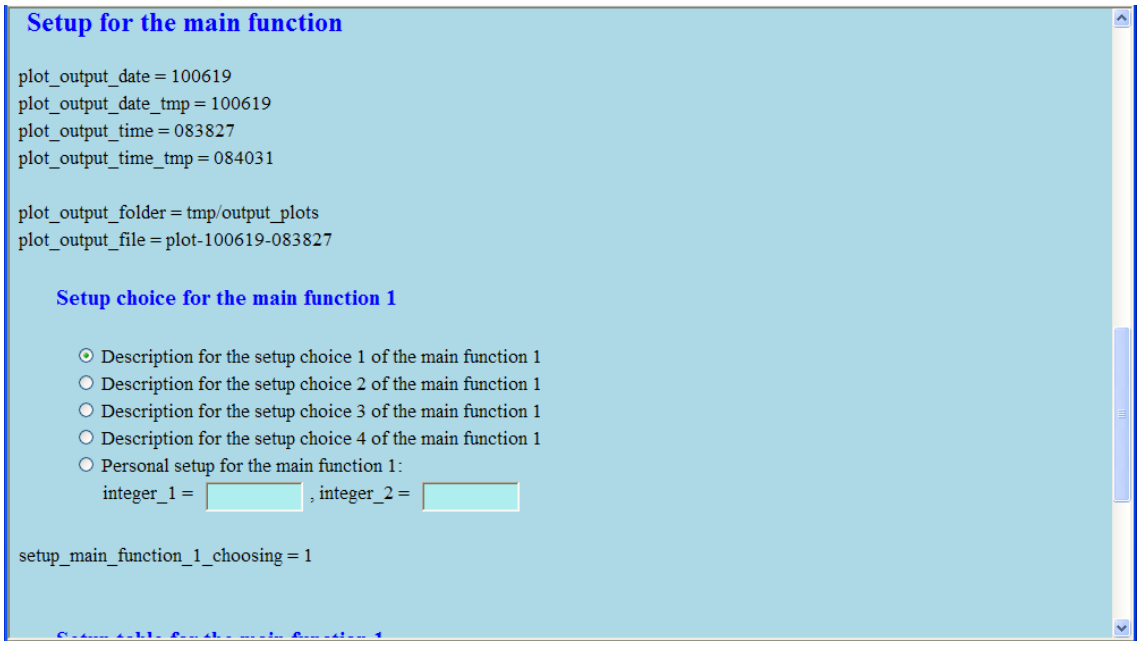


Figure 13b: Changing the generated name when reloading the current page (after submission).

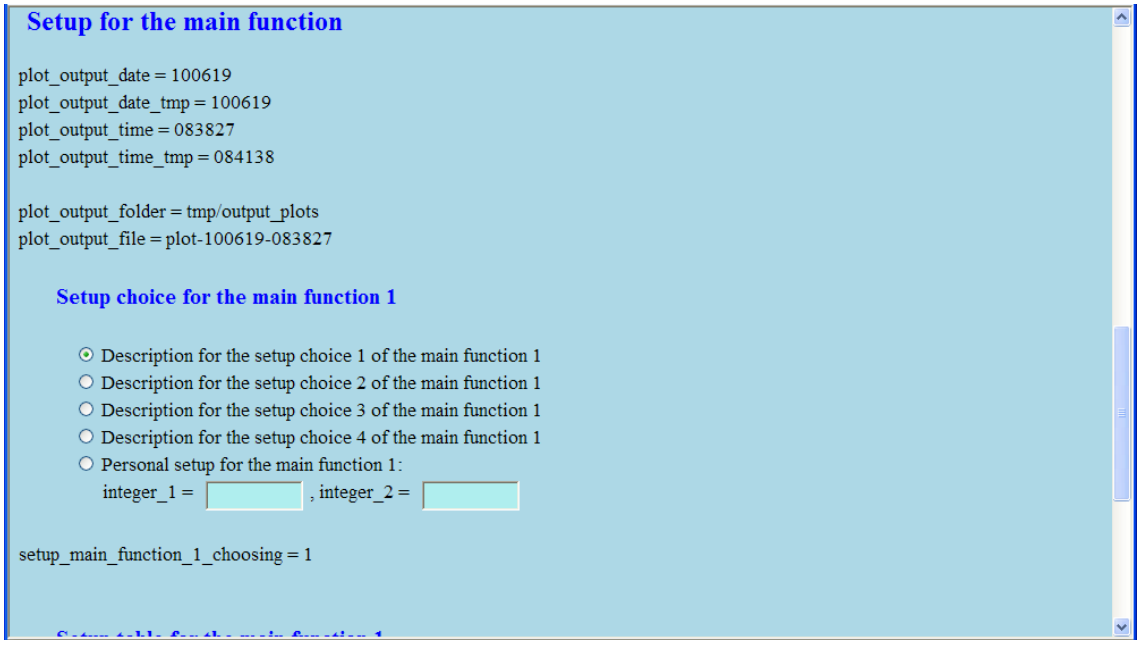


Figure 13c: Changing the generated name when reloading the current page (after reloading).

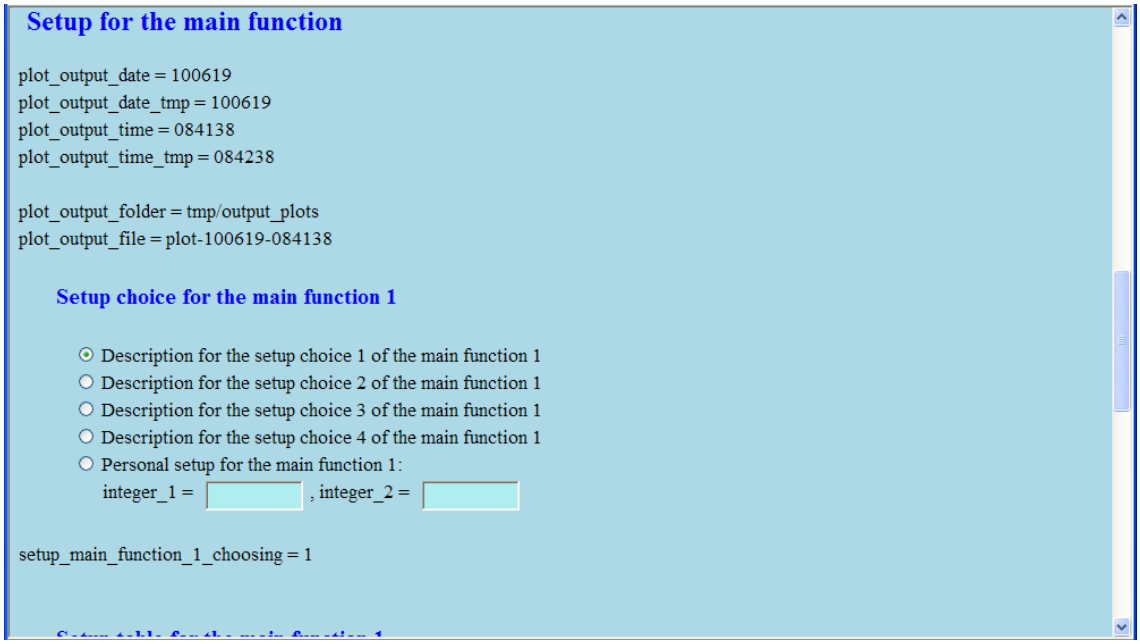


Figure 13d: Changing the generated name when reloading the current page (after re–submission).

2.2 File uploading

Template 24: Modification of the 'setup table for a group of entry' (cf. Template 15)

Script

```
<?php
  if ($setup_main_function_1_checked == "yes")
  {
    echo '<h4> Setup table for the main function 1 </h4>' . "\r\n";

    $entry_No = 3;

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      if ($setup_item_1[$n_entry] == NULL)
      {
        $setup_item_1[$n_entry] = $_POST["setup_item_1"][$n_entry];
      }

          .
          .
          .

      if ($setup_item_4[$n_entry] == NULL)
      {
        $setup_item_4[$n_entry] = $_POST["setup_item_4"][$n_entry];
      }

        $personal_file_copy[$n_entry]
      = "pf-" .  $personal_file_date .  "-" .  $personal_file_time .  "-" .  $n_entry .  ".txt";

      if ($_FILES["personal_file"]["name"][$n_entry] != NULL)
      {
        $personal_file[$n_entry] = $_FILES["personal_file"]["name"][$n_entry];

        move_uploaded_file($_FILES["personal_file"]["tmp_name"][$n_entry],
                           "$personal_file_folder/" . $personal_file_copy[$n_entry]);
      }

      elseif ($_POST["personal_file"][$n_entry] != NULL)
      {
        $personal_file[$n_entry] = $_POST["personal_file"][$n_entry];
      }

      if (file_exists("$personal_file_folder/$personal_file_copy[$n_entry]"))
      {
        echo '<input type="hidden"'                              . "\r\n";
        echo '       name="personal_file[' . $n_entry . ']"'     . "\r\n";
        echo '       value="' . $personal_file[$n_entry] . '"' . "\r\n";
        echo '       />'                                         . "\r\n";
      }
    }

    if ($setup_entry_common == NULL)
    {
      $setup_entry_common = $_POST["setup_entry_common"];
    }
```

```
    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      if ($personal_file[$n_entry] != NULL)
      {
        $personal_files = "yes";

        break;
      }
    }

    include("tables/table-setup_item_head.txt");
    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      include("tables/table-setup_item_entry.txt");
    }
    include("tables/table-setup_item_entry_common.txt");
    echo '</table>' . "\r\n";

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      if ($setup_item_1[$n_entry] == NULL                                    ||
          $setup_item_2[$n_entry] == NULL                                    ||
          $setup_item_3[$n_entry] == NULL                                    ||
          $setup_item_4[$n_entry] == NULL                                    ||
          $setup_entry_common     == NULL                                    ||
          ($personal_files == "yes"                                      &&
           !(file_exists("$personal_file_folder/$personal_file_copy[$n_entry]"))   )   )
      {
        include("default_choices/default-setup_item_head.txt");
        for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
        {
          include("default_choices/default-setup_item_entry.txt");
        }
        include("default_choices/default-setup_item_entry_common.txt");

        break;
      }

      else
      {
        echo '<br />';
        echo 'setup_item_1[' . $n_entry . '] = '  . $setup_item_1[$n_entry]  . '<br />';
        echo 'setup_item_2[' . $n_entry . '] = '  . $setup_item_2[$n_entry]  . '<br />';
        echo 'setup_item_3[' . $n_entry . '] = '  . $setup_item_3[$n_entry]  . '<br />';
        echo 'setup_item_4[' . $n_entry . '] = '  . $setup_item_4[$n_entry]  . '<br />';

        echo 'personal_file[' . $n_entry . '] = ' . $personal_file[$n_entry] . '<br />';
      }

      if ($n_entry == $entry_No)
      {
        echo '<br />';
        echo 'setup_entry_common = '              . $setup_entry_common      . '<br />';
        echo '<br />';

        $setup_item_checked = "yes";
      }
    }
  }
?>
```

Template 25

Template 26

Template 27

Check uploaded file

Template 19

Template 20

Template 21

cf. Template 10

Template 25: Modification of table-setup_item_head.txt (cf. Template 16)

Script

```
<table id="table-setup_item" border="1">

  <tr id="setup_item">

    <th style="width: 60pt"> entry </th>

    <th> setup_item_1 </th>
    <th> setup_item_2 </th>
    <th> setup_item_3 </th>
    <th> setup_item_4 </th>

    <th style="width: 150pt"> Personal files (max. 2 MB) </th>

    <?php
      if ($personal_files == "yes")        See Template 24
      {
//      for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
//      {
//        if ($personal_file[$n_entry] != NULL)
//        {
            echo '    <th style="width: 150pt"> Uploaded files </th>';

//          break;
//        }
//      }
      }
    ?>

  </tr>
```

Template 26: Modification of table-setup_item_entry.txt (cf. Template 17)

Script

```
  <tr>

    <th style="width: 60pt">
      <?php echo 'entry[' . $n_entry . ']'; ?>
    </th>

       .
       .
       .

    <td>
      <input class="table" type="text" name="setup_item_4[<?php echo $n_entry; ?>]"
             .
             .
             .

    </td>

    <td>
      <input class="table" type="file" name="personal_file[<?php echo $n_entry; ?>]"
             style="height: 19.2pt; width: 150pt; text-align: left"
             />
    </td>

    <?php
      if ($personal_files == "yes")
      {
        echo '    <td style="text-align: left; width: 140pt;'            . "\r\n";
        echo '               padding-left: 3pt; padding-right: 3pt">'    . "\r\n";

        if ($personal_file[$n_entry] != NULL)
        {
          if (file_exists("$personal_file_folder/$personal_file_copy[$n_entry]"))
          {
            echo $personal_file[$n_entry];

//          echo '      <input type="hidden"'                           . "\r\n";
//          echo '             name="personal_file[' . $n_entry . ']"'   . "\r\n";
//          echo '             value="' . $personal_file[$n_entry] . '"' . "\r\n";
//          echo '             />'                                      . "\r\n";
          }                                    Moved to Template 24

          else
          {
            echo '<span class="red">The file size is too large!</span>';
          }
        }

        else
        {
          echo ' ';
        }

        echo '</td>';
      }
    ?>

  </tr>
```

Template 27: Modification of table-setup_item_entry_common.txt (cf. Template 18)

Script

```
<tr>

  <td style="width: 60pt; border-right-style: none">
    <input class="table" type="text" name="setup_entry_common" style="width: 50pt"
           onclick="this.value=''"
           <?php
             if ($setup_entry_common != NULL)
             {
               if ($setup_entry_common <= $setup_entry_common_max)
               {
                 echo 'value="' . $setup_entry_common     . '"';
               }
               else
               {
                 echo 'value="' . $setup_entry_common_max . '"';
               }
             }
           ?>
           />
  </td>

  <th colspan=
      <?php
        if ($personal_files == "yes")
        {
          echo '"6"';      Two columns more
        }
        else
        {
          echo '"5"';      One column more
        }
      ?>
      style="text-align: left; border-left-style: none">
      unit of setup_entry_common (max. setup_entry_common_max)
  </th>

</tr>
```

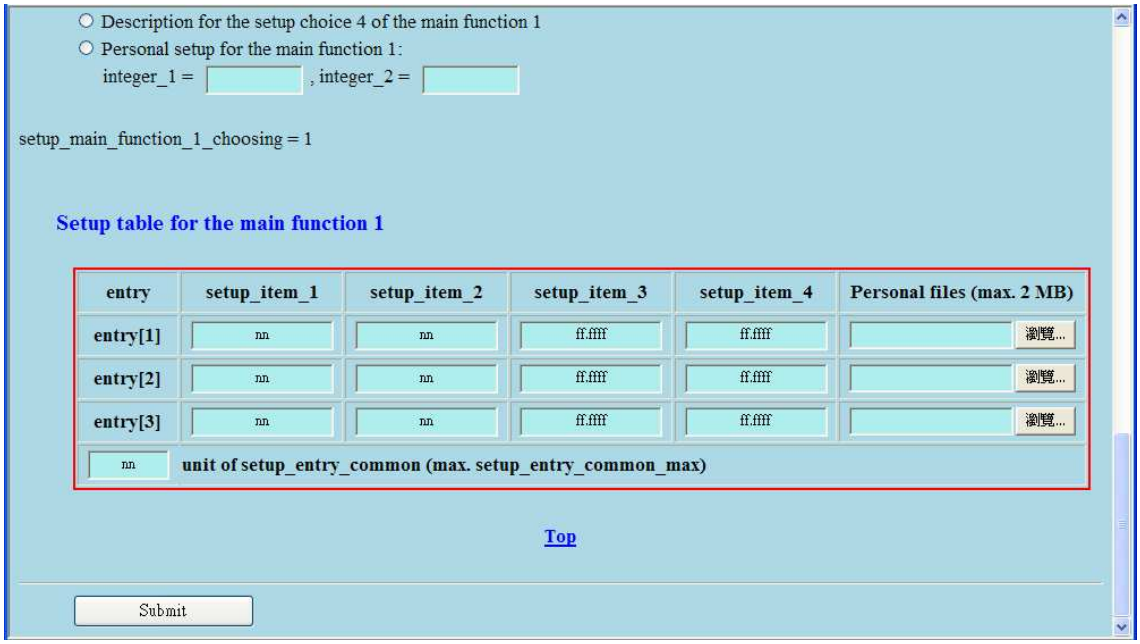


Figure 14a: Modification of the setup table for uploading files (before submission, cf. Figure 11a).

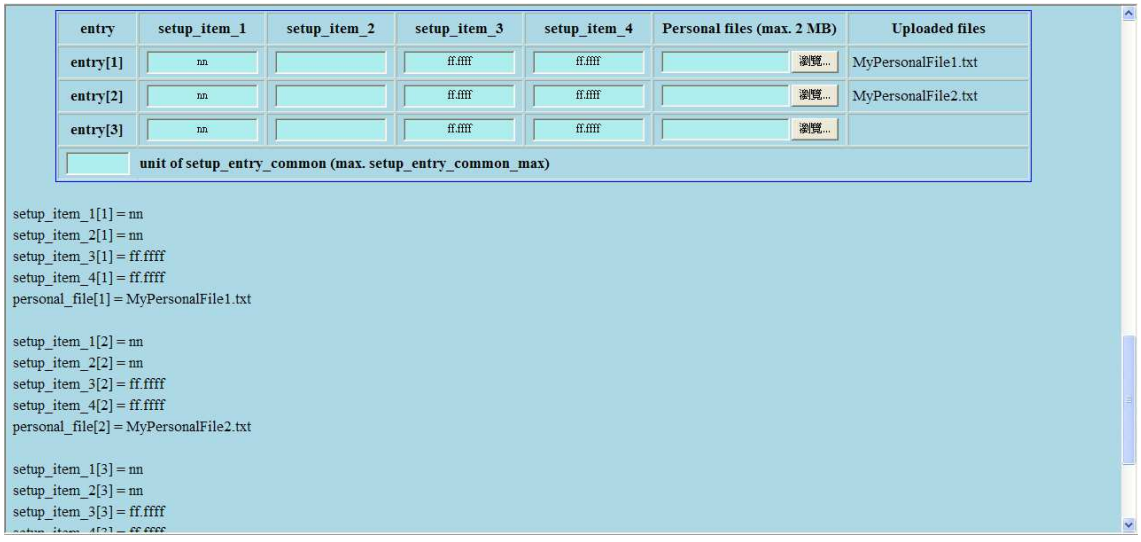


Figure 14b: Modification of setup table for uploading files (after submission, cf. Figure 11b).

Template 28: Uploading two files or typing texts (cf. Template 24)

Script

```
<?php
  if ($main_function == "main_function_1"  &&
      $mode_main_function_1_choice != NULL   )
  {
    echo '<h4> Function choice for the main function 1 </h4>' . "\r\n";

    if ($function_choosing == NULL)
    {
      $function_choosing = $_POST["function_choosing"];
    }

    if ($personal_function_text == NULL)
    {
      $personal_function_text = $_POST["personal_function_text"];
    }

      $personal_function_file_copy
    = "pf-" .  $personal_file_date .  "-" .  $personal_file_time .  "-copy.txt";

    if ($_FILES["personal_function_file"]["name"] != NULL)      Just after file 1 uploading
    {
      $personal_function_file = $_FILES["personal_function_file"]["name"];

      move_uploaded_file($_FILES["personal_function_file"]["tmp_name"],
                         "$personal_file_folder/" . $personal_function_file_copy);
    }

    elseif ($_POST["personal_function_file"] != NULL)     File 1 not uploaded or already uploaded
    {
      $personal_function_file = $_POST["personal_function_file"];
    }

    elseif ($function_choice == "function_user"      &&
            $_POST["personal_function_text"] != NULL   )      Copy the typed text 1 into a file
    {
        $personal_function_text_output
      = fopen("$personal_file_folder/" . $personal_function_file_copy, "w");

      fputs($personal_function_text_output,
            sprintf("\n"));
      fputs($personal_function_text_output,
            sprintf("%s\n", $_POST["personal_function_text"]));
      fputs($personal_function_text_output,
            sprintf("\n"));

      fclose($personal_function_text_output);

      $personal_function_file = $personal_function_file_copy;
    }

    if (file_exists("$personal_file_folder/$personal_function_file_copy") &&
        $personal_function_file != $personal_function_file_copy            )
    {                                                          File 1 uploaded, not typed
      echo '<input type="hidden"'                              . "\r\n";
      echo '       name="personal_function_file"'              . "\r\n";
      echo '       value="' . $personal_function_file . '"' . "\r\n";
      echo '       />'                                         . "\r\n";
    }
```

```
    if ($personal_function2_text == NULL)
    {
      $personal_function2_text = $_POST["personal_function2_text"];
    }

      $personal_function2_file_copy
    = "pf-" .  $personal_file_date .  "-" .  $personal_file_time .  "-copy2.txt";

       .
       .            For file/text 2
       .

    if (file_exists("$personal_file_folder/$personal_function2_file_copy") &&
        $personal_function2_file != $personal_function2_file_copy            )
    {
      echo '<input type="hidden"'                              . "\r\n";
      echo '       name="personal_function2_file"'             . "\r\n";
      echo '       value="' . $personal_function2_file . '"' . "\r\n";
      echo '       />'                                         . "\r\n";
    }

    include("forms/form-function_defining.txt");          Template 29

    if ($function_choosing == NULL                                              ||
        ($function_choice  == "function_user"                                 &&
         !(file_exists("$personal_file_folder/$personal_function_file_copy"))    )  ||
        ($function_choice  == "function_user"                                 &&
         $function2_needed == "yes"                                           &&
         !(file_exists("$personal_file_folder/$personal_function2_file_copy"))   )   )
    {
      include("default_choices/default-function_choosing.txt");      Modification of Template 5
    }

    else
    {
      echo '<br />';
      echo 'function_choosing = ' . $function_choosing . '<br />';
      echo 'function_choice   = ' . $function_choice   . '<br />';

      $function_choice_setting = "yes";
    }
  }
?>
```

Template 29: form-function_defining.txt

Script

```
<script type="text/javascript">
  function personal_function_file_uploading()
  {
    if (navigator.appName == "Microsoft Internet Explorer")
    {
      document.getElementById("setup_function").childNodes[9].checked = true;
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      document.getElementById("setup_function").childNodes[13].checked = true;
    }
  }
</script>

<fieldset id="setup_function" style="width:
  <?php
    if ($function2_needed == "yes")
    {
      echo '500';
    }
    else
    {
      echo '425';
    }
  ?>pt">

  <?php
    include("forms/form-function_choosing.txt");
  ?>

  <?php
    echo '<span style="margin-left: 18pt">Upload file';
    if ($function2_needed == "yes")
    {
      echo 's';
    }
    echo ':</span>';
  ?>

  <input class="upload" type="file" name="personal_function_file"
         onclick="personal_function_file_uploading()"
         />

  <?php
    if ($function2_needed == "yes")
    {
      echo '<input class="upload" type="file" name="personal_function2_file"' . "\r\n";
      echo '       style="margin-left: 88pt"'                                 . "\r\n";
      echo '       onclick="personal_function_file_uploading()"'              . "\r\n";
      echo '       />'                                                        . "\r\n";
      echo ' (for ......)'                                                    . "\r\n";
    }
  ?>
  <br />
```

Modification of Template 4

For uploading files

For file 1

For file 2

```
<?php
  echo '<span style="margin-left: 18pt">Type definition';
  if ($function2_needed == "yes")
  {
    echo 's';
  }
  echo ':</span>';
?>

<?php
  echo '<textarea name="personal_function_text"'                 . "\r\n";
  echo '          style="vertical-align: middle"'                . "\r\n";
  echo '          onclick="personal_function_file_uploading()">' . "\r\n";

  if ($personal_function_text                    == NULL     &&
      ($_FILES["personal_function_file"]["name"] == NULL &&
       $_POST["personal_function_file"]          == NULL   )   )
  {
    echo ' double function_user(double x)'                       . "\r\n";
    echo ' {'                                                    . "\r\n";
    echo '   return ......;'                                     . "\r\n";
    echo ' }'                                                    . "\r\n";
  }

  elseif ($personal_function_text                    != NULL     &&
          ($_FILES["personal_function_file"]["name"] == NULL &&
           $_POST["personal_function_file"]          == NULL   )   )
  {
    echo $personal_function_text                                 . "\r\n";
  }

  elseif ($personal_function_text                    != NULL     &&
          ($_FILES["personal_function_file"]["name"] != NULL ||
           $_POST["personal_function_file"]          != NULL   )   )
  {
    echo                                                           "\r\n";
  }

  echo '</textarea>'                                             . "\r\n";
?>
<br />
```

For typing texts

For text 1

The first time

File typed, not uploaded

File uploaded, not typed

```php
<?php
  if ($function2_needed == "yes")
  {
    echo '<textarea name="personal_function2_text"'                    . "\r\n";
    echo '          style="vertical-align: middle; margin-left: 107pt"' . "\r\n";
    echo '          onclick="personal_function_file_uploading()">'      . "\r\n";

    if ($personal_function2_text                    == NULL     &&
        ($_FILES["personal_function2_file"]["name"] == NULL &&
         $_POST["personal_function2_file"]          == NULL   )   )
    {
      echo '    ......'                                             . "\r\n";
    }

    elseif ($personal_function2_text                    != NULL     &&
            ($_FILES["personal_function2_file"]["name"] == NULL &&
             $_POST["personal_function2_file"]          == NULL   )   )
    {
      echo $personal_function2_text                                 . "\r\n";
    }

    elseif ($personal_function2_text                    != NULL     &&
            ($_FILES["personal_function2_file"]["name"] != NULL ||
             $_POST["personal_function2_file"]          != NULL   )   )
    {
      echo                                                            "\r\n";
    }

    echo '</textarea>'                                              . "\r\n";
    echo '  (for ......)'                                           . "\r\n";
    echo                                                            "\r\n";
    echo '  <br />'                                                 . "\r\n";
  }
?>

<?php
  if ($function_choice == "function_user")
  {
    if ($personal_function_file != NULL                         &&
        $personal_function_file != $personal_function_file_copy   )
    {
      if (file_exists("$personal_file_folder/$personal_function_file_copy"))
      {
        echo '<b>Uploaded file';
        if ($function2_needed == "yes"                                      &&
            file_exists("$personal_file_folder/$personal_function2_file_copy") &&
            $personal_function2_file != NULL                                &&
            $personal_function2_file != $personal_function2_file_copy         )
        {
          echo 's';
        }
        echo ':</b> ' . $personal_function_file;
      }

      else
      {
        echo '<span class="red">Your file can not be uploaded!</span>'  . "\r\n";
      }
    }
```

For text 2

The first time

File typed, not uploaded

File uploaded, not typed

File uploaded, not typed

File uploaded, not typed

For file 1

```
    if ($function2_needed == "yes")
    {
      if ($personal_function2_file != NULL                          &&
          $personal_function2_file != $personal_function2_file_copy   )
      {                                                                    File uploaded, not typed
        if (file_exists("$personal_file_folder/$personal_function2_file_copy"))
        {
          if (file_exists("personal_file_folder/$personal_function_file_copy") &&
              $personal_function_file != NULL                                  &&
              $personal_function_file != $personal_function_file_copy           )
          {                                                                File uploaded, not typed
            echo ', ';
          }
          else
          {
            echo '<br />'                                                  . "\r\n";
            echo '<b>Uploaded file: </b>'                                  . "\r\n";
          }
          echo $personal_function2_file;
        }

        else
        {
          echo '<span class="red">';
          if (file_exists("$personal_file_folder/$personal_function_file_copy"))
          {
            echo 'your';
          }
          else
          {
            echo 'Your';
          }
          echo ' file for ..... can not be uploaded!</span>'             . "\r\n";    For file 2
        }
      }
    }

    if (($personal_function_file != NULL                          &&
         $personal_function_file != $personal_function_file_copy   )        ||
        ($function2_needed == "yes"                                         &&
         ($personal_function2_file != NULL                            &&
          $personal_function2_file != $personal_function2_file_copy   )   )   )
    {                                                                  File(s) uploaded, not typed
      echo '<br />'                                                    . "\r\n";
    }
  }
?>
```

```
<?php
  if ($function_choice == "function_user")
  {
    if ($personal_function_file != NULL                          &&
        $personal_function_file == $personal_function_file_copy   )
    {
      if (file_exists("$personal_file_folder/$personal_function_file_copy"))
      {
        echo '<b>Saved into file';
        if ($function2_needed == "yes"                                          &&
            file_exists("personal_file_folder/$personal_function2_file_copy") &&
            $personal_function2_file != NULL                                    &&
            $personal_function2_file == $personal_function2_file_copy            )
        {
          echo 's';
        }
        echo ':</b> ' . $personal_function_file                        . "\r\n";
      }

      else
      {
        echo '<span class="red">The text can not be saved!</span>'      . "\r\n";
      }
    }
```

File typed, not uploaded

File typed, not uploaded

For text 1

```
      if ($function2_needed == "yes")
      {
        if ($personal_function2_file != NULL                          &&
            $personal_function2_file == $personal_function2_file_copy   )
        {                                                                  File typed, not uploaded
          if (file_exists("$personal_file_folder/$personal_function2_file_copy"))
          {
            if (file_exists("personal_file_folder/$personal_function_file_copy") &&
                $personal_function_file != NULL                                  &&
                $personal_function_file == $personal_function_file_copy            )
            {                                                                File typed, not uploaded
              echo ', '                                                    . "\r\n";
            }
            else
            {
              echo '<b>Saved into file: </b>'                              . "\r\n";
            }
            echo $personal_function2_file                                  . "\r\n";
          }

          else
          {
            echo '<span class="red">';
            if (file_exists("$personal_file_folder/$personal_function_file_copy"))
            {
              echo 'the';
            }
            else
            {
              echo 'The';
            }
            echo ' text for ...... can not be saved!</span>'               . "\r\n";   For text 2
          }
        }
      }

      if (($personal_function_file != NULL                          &&
           $personal_function_file == $personal_function_file_copy   )        ||
          ($function2_needed == "yes"                                      &&
           ($personal_function2_file != NULL                          &&
            $personal_function2_file == $personal_function2_file_copy   )   )   )
      {                                                                  File(s) typed, not uploaded
        echo '<br />'                                                      . "\r\n";
      }
    }
  ?>

  <b> Download: </b>
  <?php
    echo '<a href="samples/sample-function_user.txt"      target="_blank">';
    echo ' sample for a user-defined function</a>'                         . "\r\n";   Sample 1

    if ($function2_needed == "yes")
    {
      echo ', <a href="samples/sample-function2_user.txt" target="_blank">';   Sample 2
      echo 'for ......</a>'                                                . "\r\n";
    }
  ?>
 <br />

</fieldset>
```

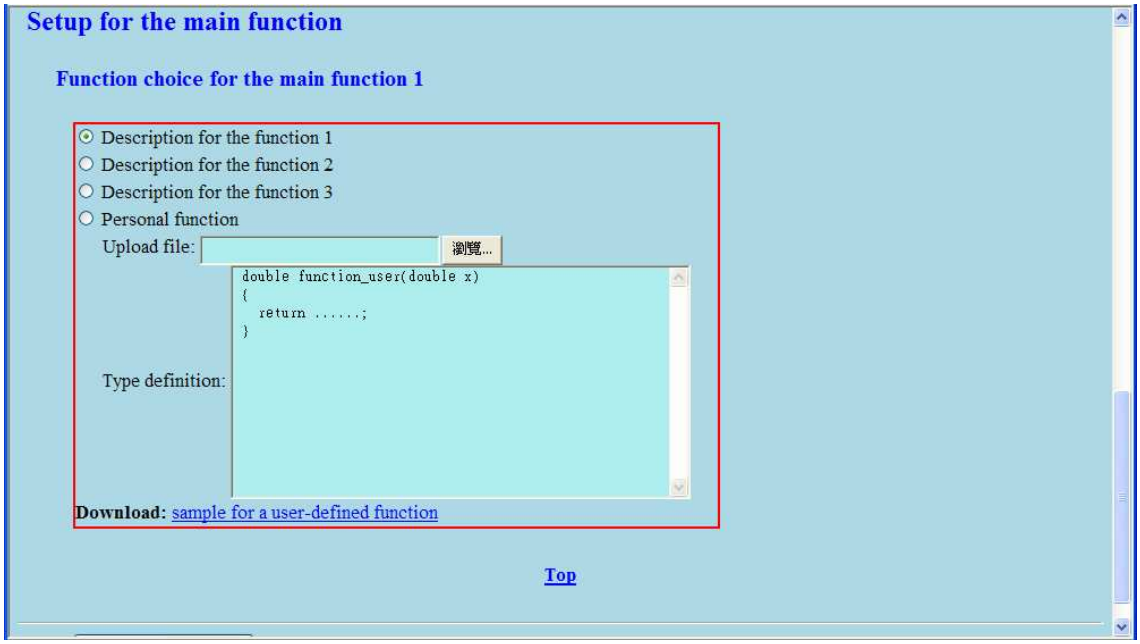


Figure 15a: Uploading only one file or typing one text (i.e., `$function2_needed != "yes"`).

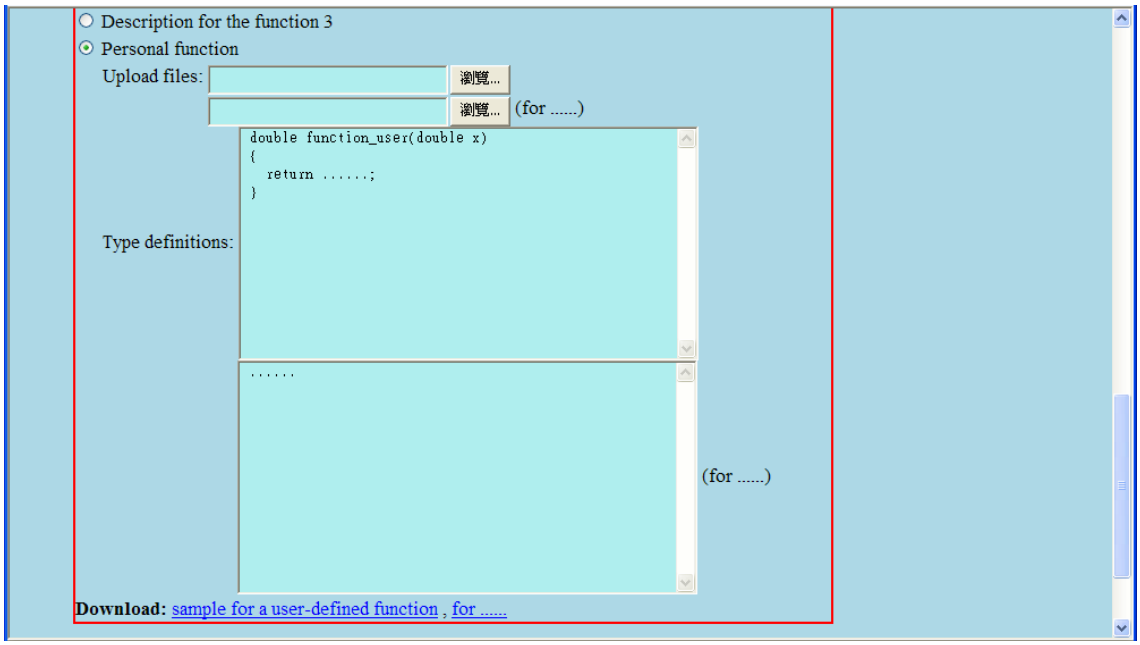


Figure 15b: Uploading two files or typing texts (i.e., `$function2_needed = "yes"`).

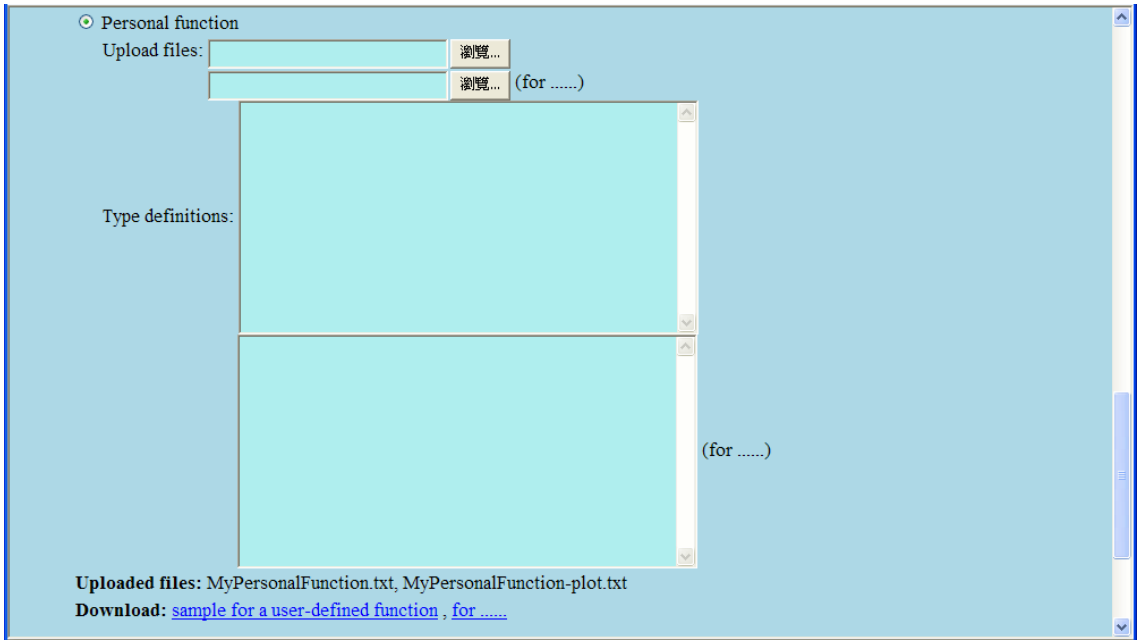


Figure 15c: Two files have been uploaded.

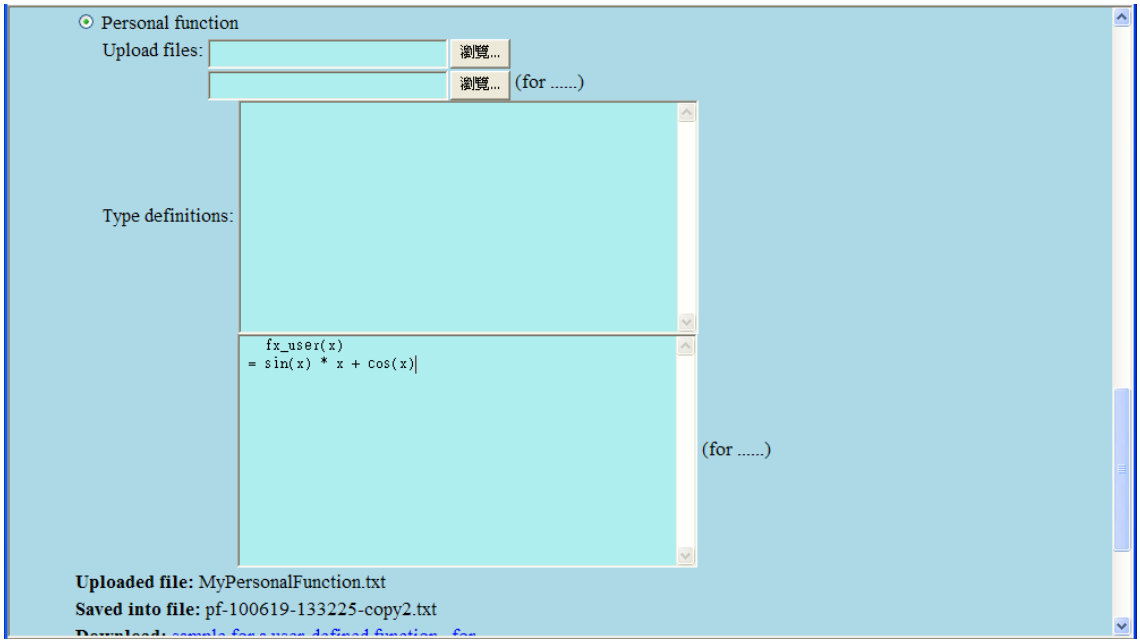


Figure 15d: Only one file has been uploaded, the other one required function has been typed and saved.

Chapter 3

Special Effects

3.1 Locking choices

Template 30: Modification of form-main_functions.txt (cf. Template 4)

Script

```
<fieldset id="main_function_choosing" style="width: 330pt">

  <input type="radio" name="main_function_choosing" value="1"
         <?php
           if ($main_function_choosing == "1")
           {
             echo "checked";

             $main_function = "main_function_1";
           }
         ?>
         />

         Description for the main function 1
         <br />

            .
            .
            .

  <input type="radio" name="main_function_choosing" value="5"
         onclick="this.checked=false"
         onmouseover="this.nextSibling.nextSibling.style.color='red'"
         onmouseout="this.nextSibling.nextSibling.style.color='black'"
         <?php
           if ($main_function_choosing == "5")
           {
             echo "checked";

             $main_function = "main_function_5";
           }
         ?>
         />

         Description for the main function 5
         <span>(will be released soon)</span>
         <br />

</fieldset>
```

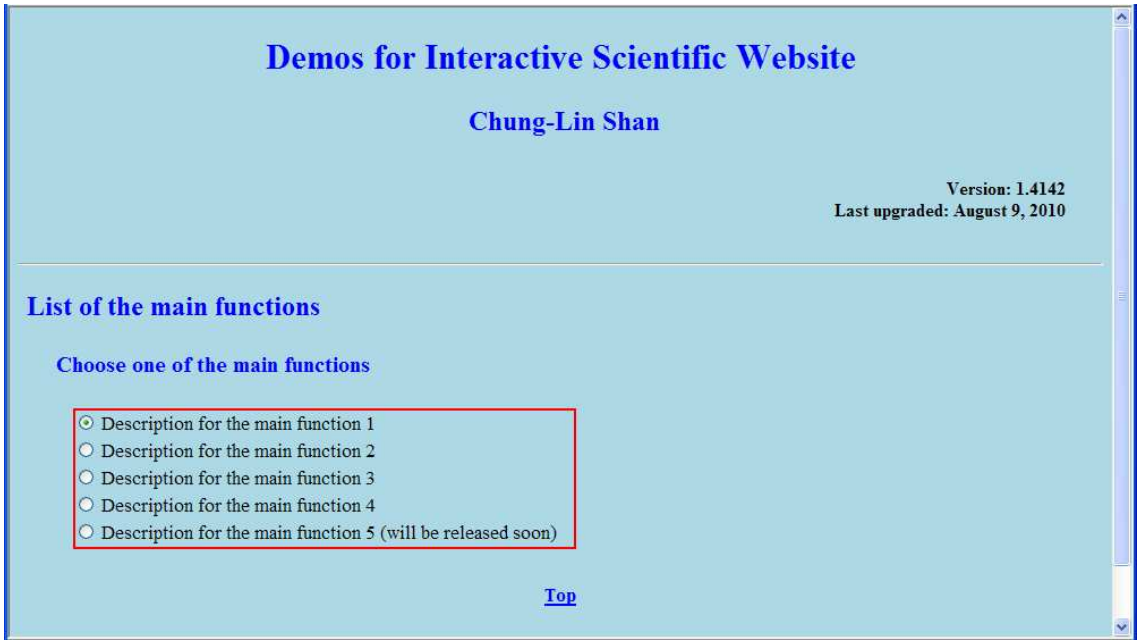


Figure 16a: Locking the choice 5 for the main function (before clicking, cf. Figure 3a).

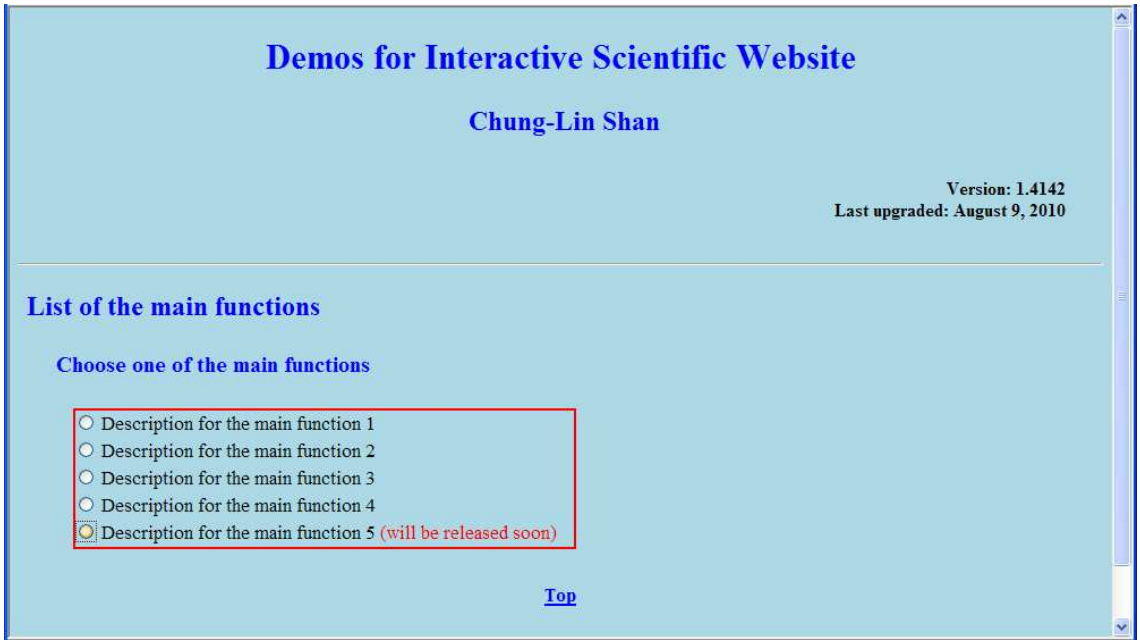


Figure 16b: Locking the choice 5 for the main function (after clicking, cf. Figure 3a).

3.2 Showing equations by request

Template 31: Modification of form-function_defining.txt (cf. Template 29)

Script

```
<script type="text/javascript">
  function show_function(fig_function)
  {
    document.getElementById("setup_function").nextSibling.nextSibling.src = fig_function;
    document.getElementById("setup_function").nextSibling.nextSibling.style.visibility = "visible";
  }

  function erase_function()
  {
    document.getElementById("setup_function").nextSibling.nextSibling.style.visibility = "hidden";
  }

  function personal_function_file_uploading()
  {
      .
      .
      .
  }
</script>

<fieldset id="setup_function" style="width: 425pt">

      .
      .
      .

</fieldset>

<img class="eq-s" src="equations/fig-function_1-s.png" style="visibility: hidden"/>
```

Template 32: Modification of form-function_choosing.txt (cf. Template 4)

Script

```
<input type="radio" name="function_choosing" value="1"
       <?php
         if ($function_choosing == "1")
         {
           echo "checked";

           $function_choice = "function_1";
         }
       ?>
       />

       Description for the function 1

       <a class="eq" href="equations/eq-function_1.html" target="_blank"
          onmouseover="show_function('equations/fig-function_1-s.png')"
          onmouseout="erase_function()"
          ><sub>analytic form</sub></a>

       <br />

          .
          .
          .
```

Template 33

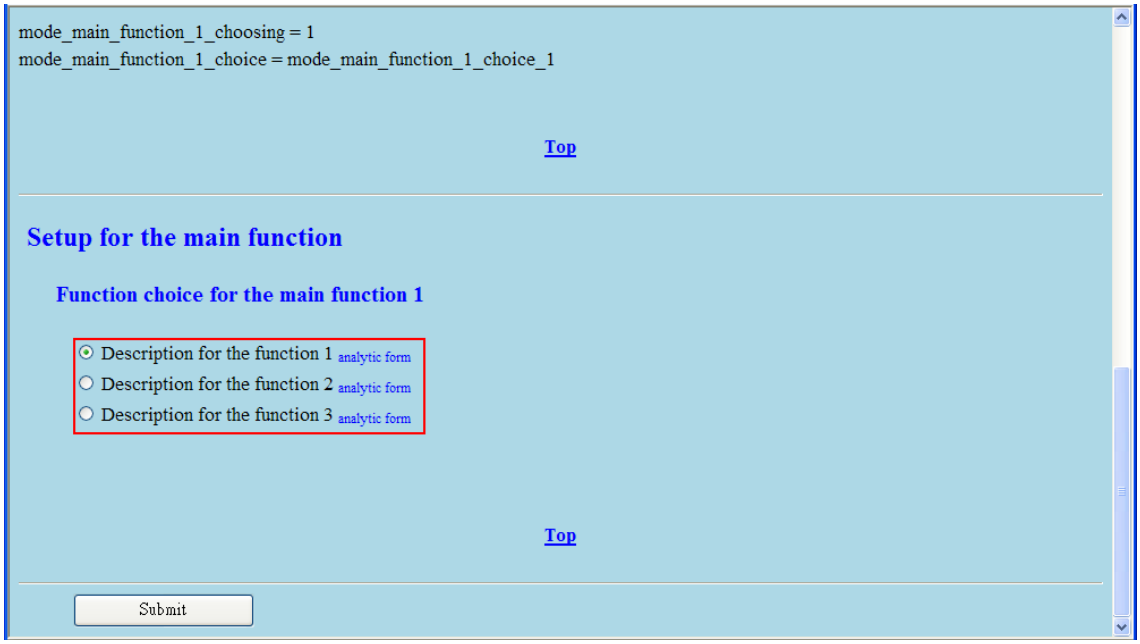


Figure 17a: Function choice for the main function 1 (cf. Figure 15a).

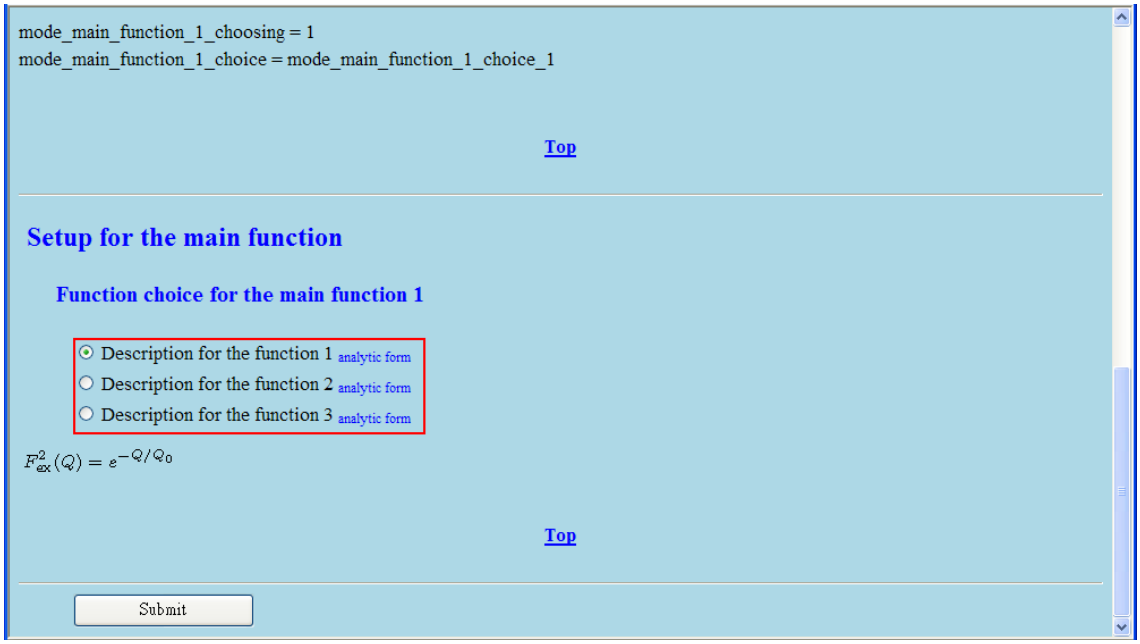


Figure 17b: Showing the equations by moving the cursor on the "analytic form" (cf. Figure 15a).

Template 33: eq-function_1.html

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> Function 1 </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=uft-8" />

<link rel="stylesheet" type="text/css" href="../main/main.css" />

</head>

<body class="en">

<h4 class="black"> Function 1 </h4>

<p class="EqCard">

<img class="eq" src="fig-function_1.png" />
<br />

Here ...
<br />

<img class="eq" src="fig-function_1_1.png" />
<br />

is ..., and
<br />

<img class="eq" src="fig-function_1_2.png" />
<br />

is ...
<br />

<br /> <br />
</p>

<h4 class="black"> References </h4>

<ol>
 <li> G. Jungman, M. Kamionkowski, and K. Griest,
      <i>Phys.  Rep.</i> <b>267</b>, 195 (1996).
      </li>
 <li> ...
      </li>
</ol>

</body>

</html>
```

Function 1

$$F_{ex}^2(Q) = e^{-Q/Q_0} .$$

Here Q is the recoil energy transferred to the target nucleus,

$$Q_0 = \frac{1.5}{m_N R_0^2}$$

is the nuclear coherence energy and

$$R_0 = \left[0.3 + 0.91 \left(\frac{m_N}{\text{GeV}}\right)^{1/3}\right] \text{ fm}$$

is the radius of the nucleus.

References

1. G. Jungman, M. Kamionkowski, and K. Griest, *Phys. Rep.* **267**, 195 (1996).
2. Some useful formulae and detailed calculations can be found in *"Theoretical Interpretation of Experimental Data from Direct Dark Matter Detection"*, C. L. Shan, *Ph.D. Thesis*, **arXiv:0707.0488 [astro-ph]** (2007).

Figure 18: eq-function_1.html.

3.3 Showing definitions of notations by request

Template 34: show_definition.txt

Script

```
<script type="text/javascript">
  var show_def = "<sup>* Move the cursor onto a notation for checking its definition.</sup>"
</script>
```

Template 35: Modification 2 of table-setup_item.txt (cf. Template 13)

Script

```
<script type="text/javascript">
  function show_def_item(def_item)
  {
    if (navigator.appName == "Microsoft Internet Explorer")
    {
      document.getElementById("table-setup_item").nextSibling.innerHTML = def_item;
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      document.getElementById("table-setup_item").nextSibling.nextSibling.innerHTML = def_item;
    }
  }

  function erase_def_item()
  {
    if (navigator.appName == "Microsoft Internet Explorer")
    {
      document.getElementById("table-setup_item").nextSibling.innerHTML = show_def;
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      document.getElementById("table-setup_item").nextSibling.nextSibling.innerHTML = show_def;
    }
  }
</script>
```

```
<table id="table-setup_item" border="1">

  <tr id="setup_item">

    <th>
      <span onmouseover="show_def_item('setup_item_1: definition of setup_item_1')"
            onmouseout="erase_def_item()"
            > setup_item_1 </span>
    </th>

    <th>
      <span onmouseover="show_def_item('setup_item_2: definition of setup_item_2')"
            onmouseout="erase_def_item()"
            > setup_item_2 </span>
    </th>

        .
        .
        .

  </tr>

  <tr>

        .
        .
        .

  </tr>

</table>

<span class="def">
<script type="text/javascript">
  document.write(show_def);
</script>
</span>
```

Template 34, cf. Template 36

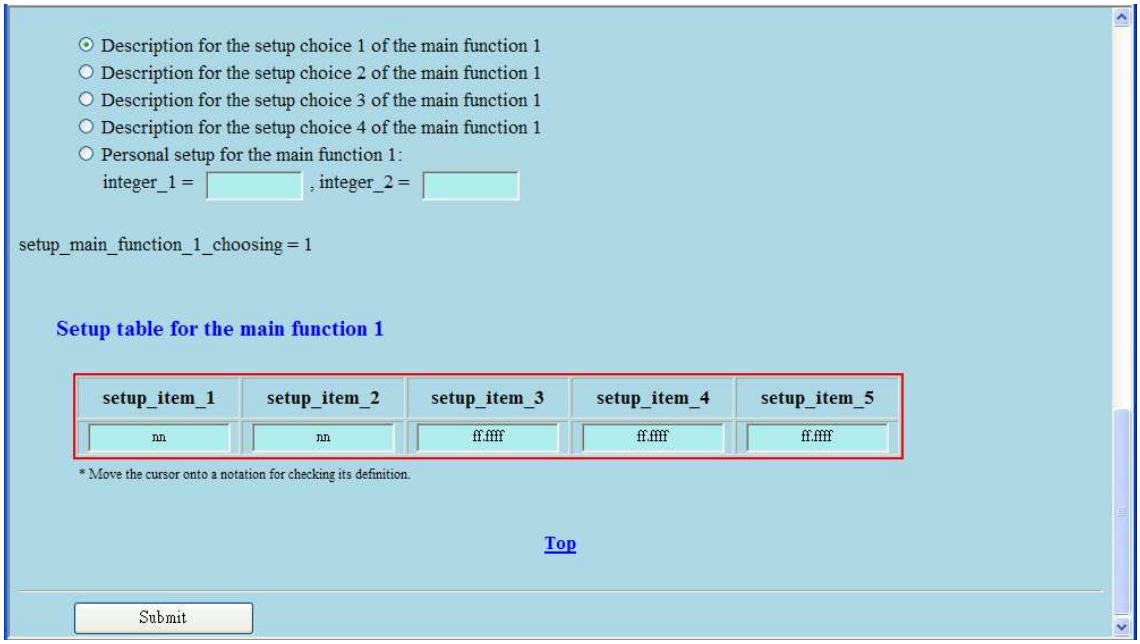


Figure 19a: A setup table with default values (cf. Figure 9).

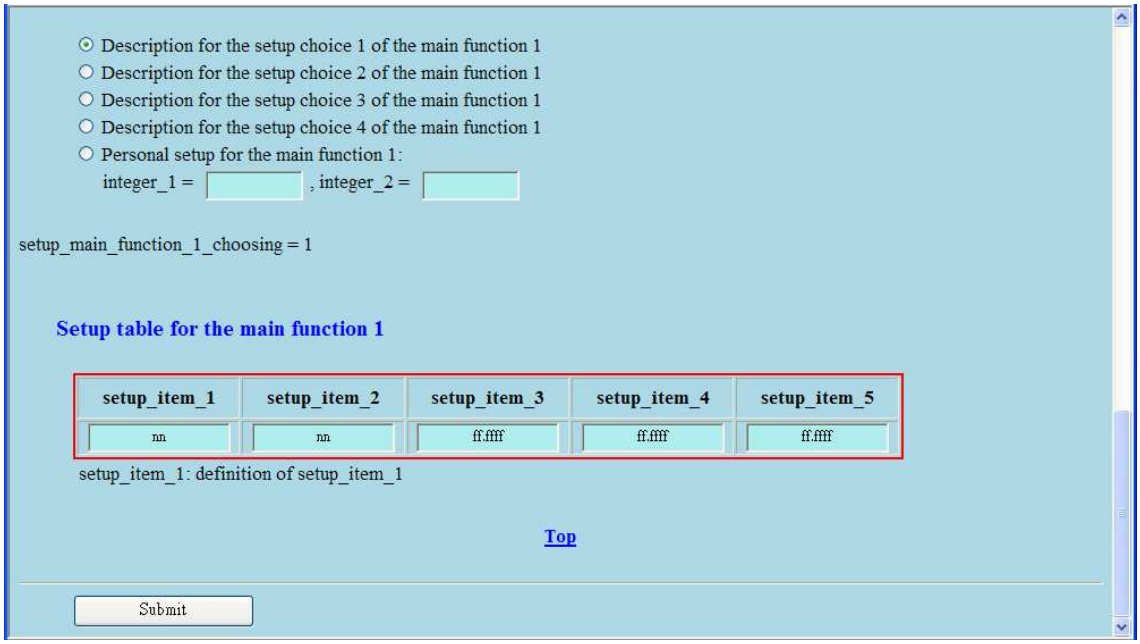


Figure 19b: Showing its definition by moving the cursor on each notation (cf. Figure 9).

3.4 Calculating values of items by giving values of other items

Template 36: Modification 2 of the 'setup table for a group of entry' (cf. Template 15)

Script

```
<?php
  include("tables/show_definition.txt");                    Template 34

  if ($setup_main_function_1_checked == "yes")
  {
    echo '<h4> Setup table for the main function 1 </h4>' . "\r\n";

    $entry_No = 3;

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {

        .
        .
        .

    }

    if ($setup_entry_common == NULL)
    {
      $setup_entry_common = $_POST["setup_entry_common"];
    }

    include("tables/table-setup_item_head.txt");
    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      include("tables/table-setup_item_entry.txt");
    }
    include("tables/table-setup_item_entry_common.txt");
    echo '</table>'                          . "\r\n";

    echo '<span class="def">'                . "\r\n";
    echo '<script type="text/javascript">'   . "\r\n";
    echo '  document.write(show_def);'       . "\r\n";      Template 34, cf. Template 35
    echo '</script>'                         . "\r\n";
    echo '</span>'                           . "\r\n";

    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {

        .
        .
        .

    }
  }
?>
```

Template 37: Modification 2 of table-setup_item_head.txt (cf. Templates 16 and 35)

Script

```
<script type="text/javascript">
  var run;
  var run_max;

  function erase_setup_item_4(run_max)
  {
    var n_Entry = document.getElementById("setup_item");

    <?php
      if ($setup_item2_needed == "yes")                    Check if Table 2 exists!
      {
        echo 'var n_Entry2 = document.getElementById("setup_item2");';          For table 2
      }
    ?>

    if (navigator.appName == "Microsoft Internet Explorer")
    {
      for (run = 1; run <= run_max; run ++)                Skip run_max rows/n_entry's
      {
        n_Entry = n_Entry.nextSibling;

        <?php
          if ($setup_item2_needed == "yes")                Check if Table 2 exists!
          {
            echo 'n_Entry2 = n_Entry2.nextSibling;';       For table 2
          }
        ?>
      }

      n_Entry.childNodes[4].childNodes[0].value = "";

      <?php
        if ($setup_item2_needed == "yes")                  Check if Table 2 exists!
        {
          echo 'n_Entry2.childNodes[4].innerHTML = "";';   For table 2
          echo 'n_Entry2.childNodes[5].innerHTML = "";';
        }
      ?>
    }
```

```
    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      for (run = 1; run <= run_max; run ++)          Skip run_max rows/n_entry's
      {
        n_Entry = n_Entry.nextSibling.nextSibling;

        <?php
          if ($setup_item2_needed == "yes")          Check if Table 2 exists!
          {
            echo 'n_Entry2 = n_Entry2.nextSibling.nextSibling;';          For table 2
          }
        ?>
      }

      n_Entry.childNodes[9].childNodes[1].value = "";

      <?php
        if ($setup_item2_needed == "yes")          Check if Table 2 exists!
        {
          echo 'n_Entry2.childNodes[ 9].innerHTML = "";';          For table 2
          echo 'n_Entry2.childNodes[11].innerHTML = "";';
        }
      ?>
    }
  }
</script>
```

```
<script type="text/javascript">
  function show_def_item(def_item)
  {
      .
      .
      .
  }
```

See Template 35

```
  function erase_def_item()
  {
      .
      .
      .
  }
</script>

<table id="table-setup_item" border="1">

  <tr id="setup_item">

    <th style="width: 60pt"> entry </th>

    <th>
      <span onmouseover="show_def_item('setup_item_1: definition of setup_item_1')"
            onmouseout="erase_def_item()"
            > setup_item_1 </span>
    </th>

       .
       .
       .

    <th>
      <span onmouseover="show_def_item('setup_item_4: definition of setup_item_4')"
            onmouseout="erase_def_item()"
            > setup_item_4 </span>
    </th>

  </tr>
```

See Templates 16 and 35

Template 38: Modification 2 of table-setup_item_entry.txt (cf. Template 17)

Script

```
<tr>

  <th style="width: 60pt">
    <?php echo 'entry[' . $n_entry . ']'; ?>
  </th>

     .
     .
     .

  <td>
    <input class="table" type="text" name="setup_item_4[<?php echo $n_entry; ?>]"
           onclick="erase_setup_item_4(<?php echo $n_entry; ?>)"
           <?php
             if ($calculate_setup_item2_4 == "yes")
             {
               echo 'onkeyup="calculate_setup_item2_4(' . $n_entry . ')"';
             }
           ?>
           />
  </td>

     .
     .
     .

</tr>
```

Check if the calculation is needed!

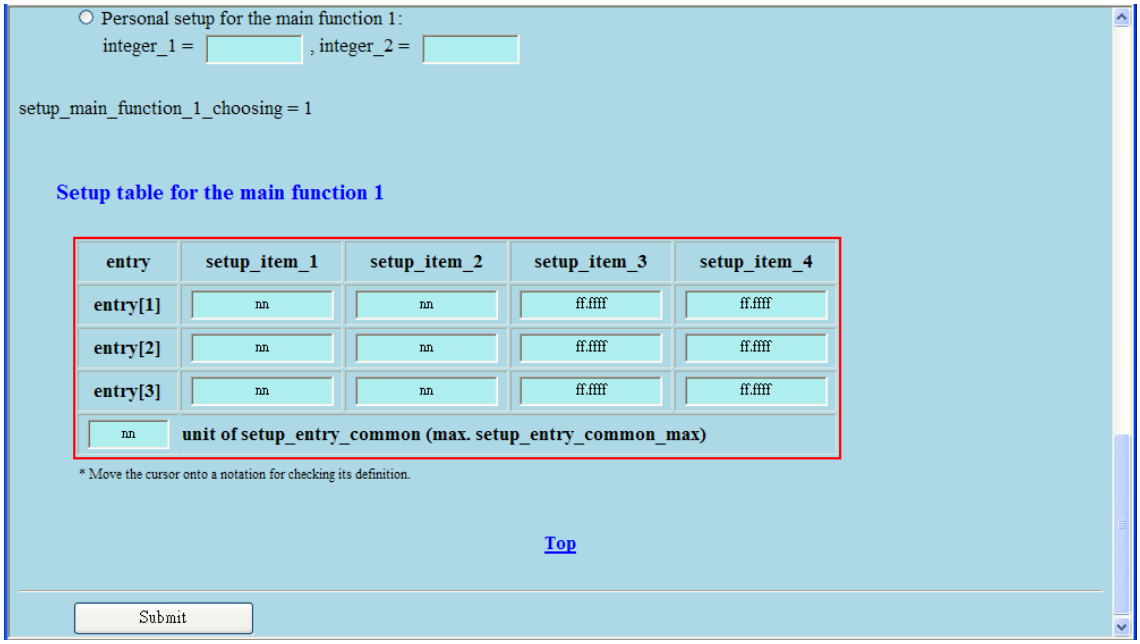


Figure 20a: A setup table for a group of entry with default values (cf. Figures 11a and 19a).

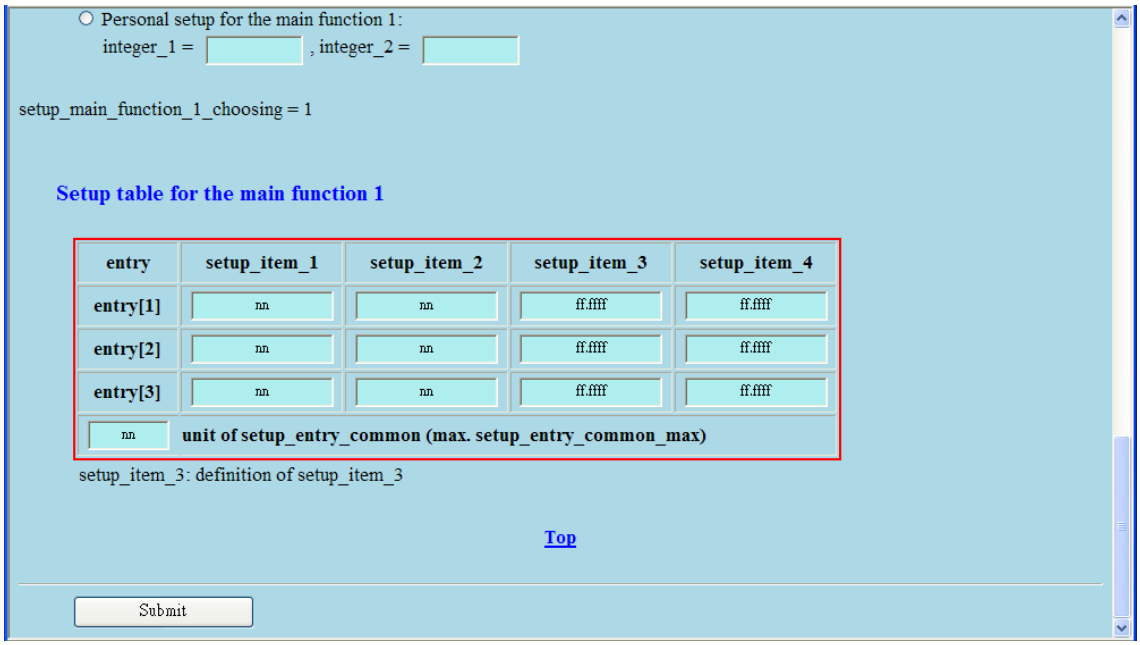


Figure 20b: Showing its definition by moving the cursor on each notation (cf. Figures 11a and 19b).

Template 39: Modification 2 of table-setup_item2_head.txt (cf. Templates 16 and 37)

Script

```
<script type="text/javascript">
  var run;
  var run_max;

  function erase_setup_item2_4(run_max)          Erase both item2_4 and item2_5!
  {
    var n_Entry2 = document.getElementById("setup_item2");

    if (navigator.appName == "Microsoft Internet Explorer")
    {
      for (run = 1; run <= run_max; run ++)
      {
        n_Entry2 = n_Entry2.nextSibling;
      }

      n_Entry2.childNodes[3].childNodes[0].value = "";

      n_Entry2.childNodes[4].innerHTML = "";
      n_Entry2.childNodes[5].innerHTML = "";      Use innerHTML, not childNodes[0].value!
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      for (run = 1; run <= run_max; run ++)
      {
        n_Entry = n_Entry2.nextSibling.nextSibling;
      }

      n_Entry2.childNodes[ 7].childNodes[1].value = "";

      n_Entry2.childNodes[ 9].innerHTML = "";
      n_Entry2.childNodes[11].innerHTML = "";     Use innerHTML, not childNodes[0].value!
    }
  }
</script>
```

```
<script type="text/javascript">
  function calculate_setup_item2_4(run_max)
  {
    var n_Entry  = document.getElementById("setup_item");
    var n_Entry2 = document.getElementById("setup_item2");

    if (navigator.appName == "Microsoft Internet Explorer")
    {
      for (run = 1; run <= run_max; run ++)
      {
        n_Entry  = n_Entry.nextSibling;
        n_Entry2 = n_Entry2.nextSibling;
      }

      if (  n_Entry2.childNodes[3].childNodes[0].value
          > setup_item2_3_max                          )
      {
        n_Entry2.childNodes[3].childNodes[0].value = setup_item2_3_max;
      }

        n_Entry2.childNodes[4].innerHTML
      = n_Entry.childNodes[4].childNodes[0].value *
        n_Entry2.childNodes[3].childNodes[0].value;

        n_Entry2.childNodes[5].innerHTML
      =   n_Entry.childNodes[4].childNodes[0].value
        - n_Entry.childNodes[4].childNodes[0].value *
          n_Entry2.childNodes[3].childNodes[0].value;
    }

    else
//  if (navigator.userAgent.search("Netscape") != -1 ||
//      navigator.userAgent.search("Firefox" ) != -1 ||
//      navigator.userAgent.search("Safari"  ) != -1   )
    {
      for (run = 1; run <= run_max; run ++)
      {
        n_Entry  = n_Entry.nextSibling.nextSibling;
        n_Entry2 = n_Entry2.nextSibling.nextSibling;
      }

      if (  n_Entry2.childNodes[7].childNodes[1].value
          > setup_item2_3_max                          )
      {
        n_Entry2.childNodes[7].childNodes[1].value = setup_item2_3_max;
      }

        n_Entry2.childNodes[9].innerHTML
      = n_Entry.childNodes[9].childNodes[1].value *
        n_Entry2.childNodes[7].childNodes[1].value;

        n_Entry2.childNodes[11].innerHTML
      =   n_Entry.childNodes[9].childNodes[1].value
        - n_Entry.childNodes[9].childNodes[1].value *
          n_Entry2.childNodes[7].childNodes[1].value;
    }
  }
</script>
```

Do not use [5] = [4] * (1.0 - [3])!

Do not use [11] = [9] * (1.0 - [7])!

```
<script type="text/javascript">
  function show_def_item2(def_item2)
  {
      .
      .
      .
  }
```

See Template 35

```
  function erase_def_item2()
  {
      .
      .
      .
  }
</script>

<table id="table-setup_item2" border="1">

  <tr id="setup_item2">

    <th style="width: 60pt"> entry </th>

    <th>
      <span onmouseover="show_def_item2('setup_item2_1: definition of setup_item2_1')"
            onmouseout="erase_def_item2()"
            > setup_item2_1 </span>
    </th>

       .
       .
       .

    <th>
      <span onmouseover="show_def_item2('setup_item2_5: definition of setup_item2_5')"
            onmouseout="erase_def_item2()"
            > setup_item2_5 </span>
    </th>

  </tr>
```

See Templates 16 and 35

Template 40: Modification 2 of table-setup_item2_entry.txt (cf. Templates 17 and 38)

Script

```
<tr>

  <th style="width: 60pt">
    <?php echo 'entry[' . $n_entry . ']'; ?>
  </th>

  <td>
    <input class="table" type="text" name="setup_item2_1[<?php echo $n_entry; ?>]"
           onclick="this.value=''"
           <?php
             if ($setup_item2_1[$n_entry] != NULL)
             {
               echo 'value="' . $setup_item2_1[$n_entry] . '"';
             }
           ?>
           />
  </td>

  <td>
    <input class="table" type="text" name="setup_item2_2[<?php echo $n_entry; ?>]"
           onclick="this.value=''"
           <?php
             if ($setup_item2_2[$n_entry] == 0.00001)
             {
               echo 'value="0"';
             }
             elseif ($setup_item2_2[$n_entry] != NULL)
             {
               echo 'value="' . $setup_item2_2[$n_entry] . '"';
             }
           ?>
           />
  </td>

  <td>
    <input class="table" type="text" name="setup_item2_3[<?php echo $n_entry; ?>]"
           onclick="erase_setup_item2_4(<?php echo $n_entry; ?>)"
           onkeyup="calculate_setup_item2_4(<?php echo $n_entry; ?>)"
           <?php
             if ($setup_item2_3[$n_entry] != NULL)
             {
               if ($setup_item2_3[$n_entry] <= $setup_item2_3_max)
               {
                 echo 'value="' . $setup_item2_3[$n_entry] . '"';
               }
               else
               {
                 echo 'value="' . $setup_item2_3_max . '"';
               }
             }
           ?>
           />
  </td>
```

```
  <td>
    <?php
      if ($setup_item_4[$n_entry]  != NULL &&
          $setup_item2_3[$n_entry] != NULL   )
      {
        echo $setup_item_4[$n_entry] * $setup_item2_3[$n_entry];
      }
    ?>
  </td>
```

Calculate the values

```
  <td>
    <?php
      if ($setup_item_4[$n_entry]  != NULL &&
          $setup_item2_3[$n_entry] != NULL   )
      {
        echo $setup_item_4[$n_entry] - $setup_item_4[$n_entry] * $setup_item2_3[$n_entry];
      }
    ?>
  </td>

</tr>
```

Do not use `4[] * (1.0 - 2_3[])`!

Template 41: default-setup_item2_head.txt (cf. Template 19)

Script

```
<script type="text/javascript">
  document.getElementById("table-setup_item2").style.borderColor = "red";
  document.getElementById("table-setup_item2").border = "2";

  if (navigator.appName == "Microsoft Internet Explorer")
  {
    var n_Entry  = document.getElementById("setup_item").nextSibling;
    var n_Entry2 = document.getElementById("setup_item2").nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    var n_Entry  = document.getElementById("setup_item").nextSibling.nextSibling;
    var n_Entry2 = document.getElementById("setup_item2").nextSibling.nextSibling;
  }
</script>
```

Template 42: default-setup_item2_entry.txt (cf. Templates 20 and 39)

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    n_Entry2.childNodes[1].childNodes[0].value = "nn";

    n_Entry2.childNodes[2].childNodes[0].value = "nn";

    n_Entry2.childNodes[3].childNodes[0].value = "ff.ffff";

      n_Entry2.childNodes[4].innerHTML
    = n_Entry.childNodes[4].childNodes[0].value *
      n_Entry2.childNodes[3].childNodes[0].value;
                                                        See Template 39
      n_Entry2.childNodes[5].innerHTML
    =   n_Entry.childNodes[4].childNodes[0].value
      - n_Entry.childNodes[4].childNodes[0].value *
        n_Entry2.childNodes[3].childNodes[0].value;

    n_Entry  = n_Entry.nextSibling;
    n_Entry2 = n_Entry2.nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    n_Entry2.childNodes[3].childNodes[1].value = "nn";

    n_Entry2.childNodes[5].childNodes[1].value = "nn";

    n_Entry2.childNodes[7].childNodes[1].value = "ff.ffff";

      n_Entry2.childNodes[9].innerHTML
    = n_Entry.childNodes[9].childNodes[1].value *
      n_Entry2.childNodes[7].childNodes[1].value;
                                                        See Template 39
      n_Entry2.childNodes[11].innerHTML
    =   n_Entry.childNodes[9].childNodes[1].value
      - n_Entry.childNodes[9].childNodes[1].value *
        n_Entry2.childNodes[7].childNodes[1].value;

    n_Entry  = n_Entry.nextSibling.nextSibling;
    n_Entry2 = n_Entry2.nextSibling.nextSibling;
  }
</script>
```

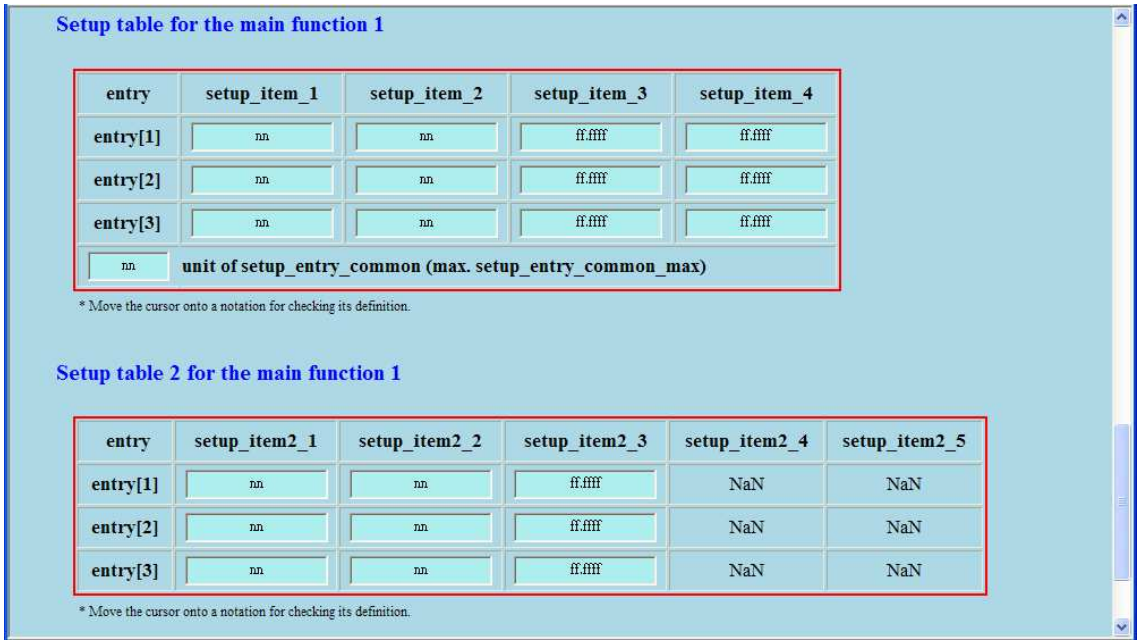


Figure 21a: Two setup tables with default values (cf. Figure 20a).

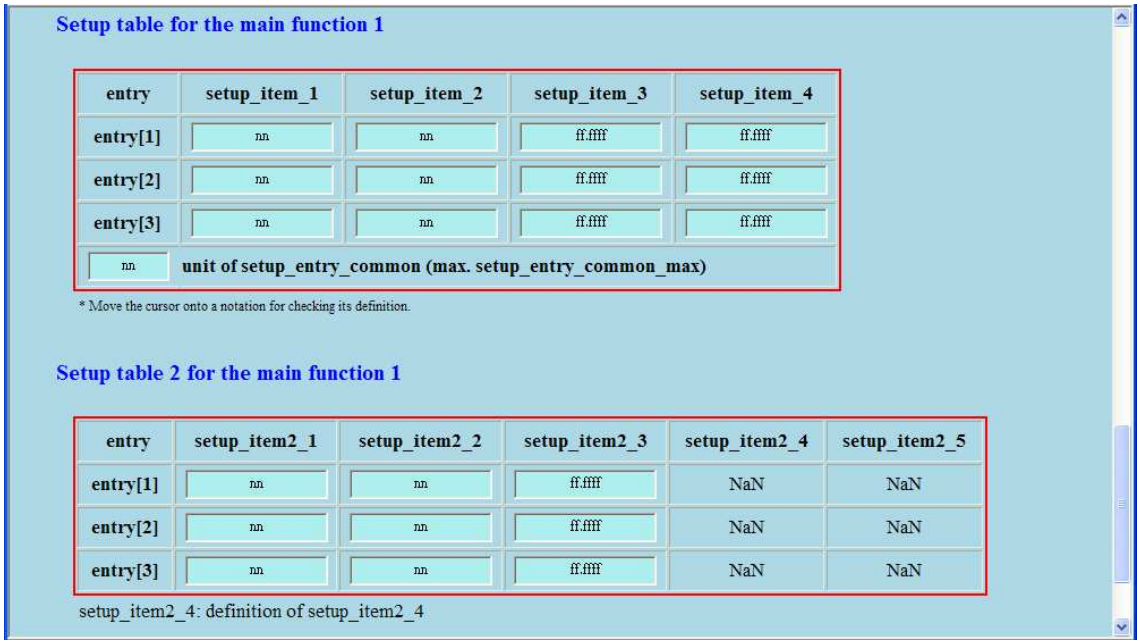
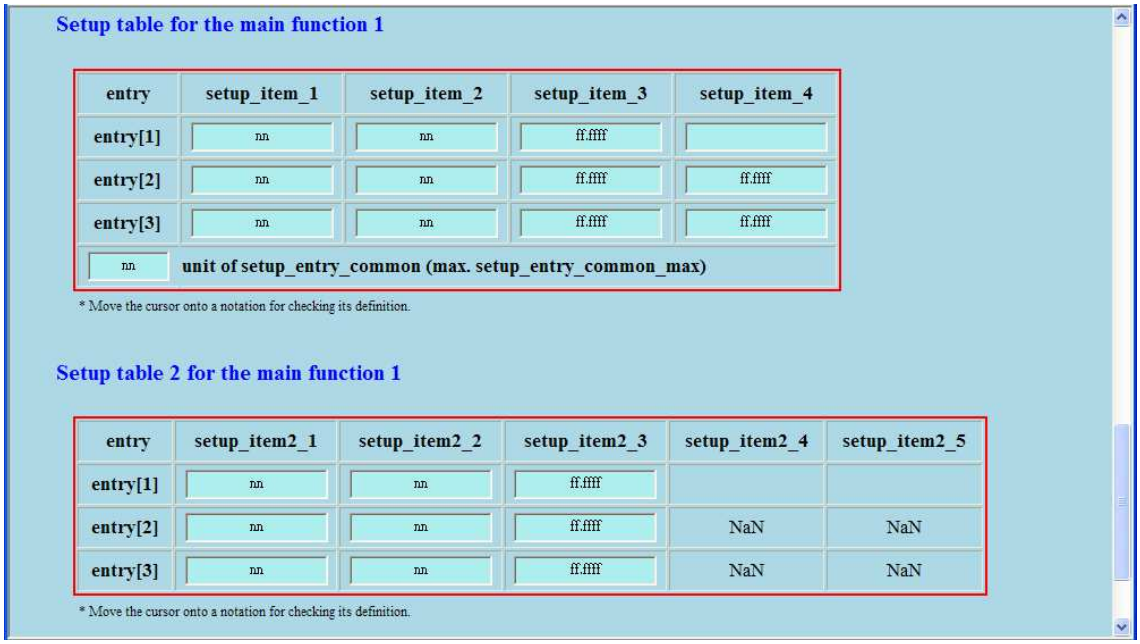


Figure 21b: Showing its definition by moving the cursor on each notation (cf. Figure 20b).



Setup table for the main function 1

entry	setup_item_1	setup_item_2	setup_item_3	setup_item_4
entry[1]	nn	nn	ff.ffff	
entry[2]	nn	nn	ff.ffff	ff.ffff
entry[3]	nn	nn	ff.ffff	ff.ffff

nn unit of setup_entry_common (max. setup_entry_common_max)

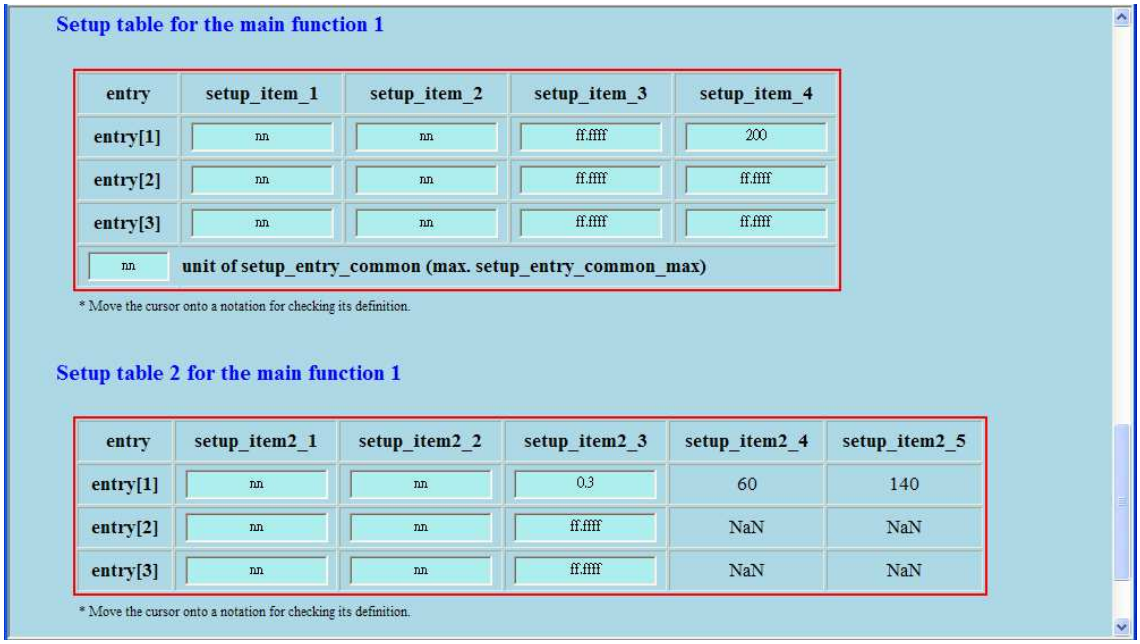
* Move the cursor onto a notation for checking its definition.

Setup table 2 for the main function 1

entry	setup_item2_1	setup_item2_2	setup_item2_3	setup_item2_4	setup_item2_5
entry[1]	nn	nn	ff.ffff		
entry[2]	nn	nn	ff.ffff	NaN	NaN
entry[3]	nn	nn	ff.ffff	NaN	NaN

* Move the cursor onto a notation for checking its definition.

Figure 21c: Clicking the "setup_item_4" of "entry[1]".



Setup table for the main function 1

entry	setup_item_1	setup_item_2	setup_item_3	setup_item_4
entry[1]	nn	nn	ff.ffff	200
entry[2]	nn	nn	ff.ffff	ff.ffff
entry[3]	nn	nn	ff.ffff	ff.ffff

nn unit of setup_entry_common (max. setup_entry_common_max)

* Move the cursor onto a notation for checking its definition.

Setup table 2 for the main function 1

entry	setup_item2_1	setup_item2_2	setup_item2_3	setup_item2_4	setup_item2_5
entry[1]	nn	nn	0.3	60	140
entry[2]	nn	nn	ff.ffff	NaN	NaN
entry[3]	nn	nn	ff.ffff	NaN	NaN

* Move the cursor onto a notation for checking its definition.

Figure 21d: The "setup_item2_4" and "setup_item2_5" of "entry[1]" have been calculated automatically.

3.5 Eliminating cells of table

Template 43: table-delete_setup_item_4.txt

Script

```
<script type="text/javascript">
  document.getElementById("setup_item").deleteCell(3);
```

Delete the 4th column (setup_item_4)

```
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    document.getElementById("setup_item").nextSibling.deleteCell(3);
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    document.getElementById("setup_item").nextSibling.nextSibling.deleteCell(3);
  }
</script>
```

See also Template 44.

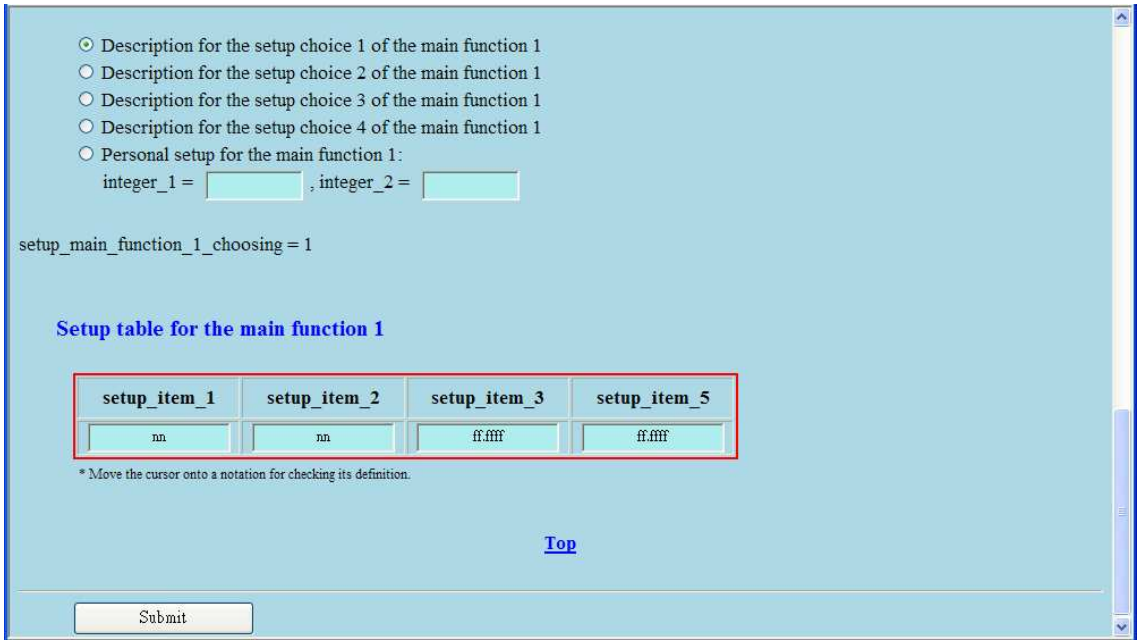


Figure 22: The 4th column of the setup table has been deleted (cf. Figures 9 and 19a).

Template 44: Modification 3 of the 'setup table for the chosen function' (cf. Template 15)

Script

```
<?php
  if ($setup_main_function_1_checked == "yes")
  {
    echo '<h4> Setup table for the main function 1 </h4>' . "\r\n";

    $entry_No = 3;

          .
          .
          .

      if ($n_entry == $entry_No)
      {
        echo '<br />';
        echo 'setup_entry_common =             ' . $setup_entry_common     . '<br />';
        echo '<br />';

        $setup_item_checked = "yes";
      }
    }

    include("tables/table-delete_setup_item_3_head.txt");
    for ($n_entry = 1; $n_entry <= $entry_No; $n_entry ++)
    {
      include("tables/table-delete_setup_item_3_entry.txt");
    }
  }
?>
```

Template 45

Template 46

Delete the 4th column (`setup_item_3[]`) row by row

Template 45: table-delete_setup_item_3_head.txt (cf. Template 43)

Script

```
<script type="text/javascript">
  document.getElementById("setup_item").deleteCell(3);
```

Delete the 4th column (`setup_item_4[]`)

```
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    var n_Enrty_D = document.getElementById("setup_item").nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    var n_Enrty_D = document.getElementById("setup_item").nextSibling.nextSibling;
  }
</script>
```

Template 46: table-delete_setup_item_3_entry.txt (cf. Template 43)

Script

```
<script type="text/javascript">
  n_Enrty_D.deleteCell(3);

  if (navigator.appName == "Microsoft Internet Explorer")
  {
    n_Enrty_D = n_Enrty_D.nextSibling;
  }

  else
//if (navigator.userAgent.search("Netscape") != -1 ||
//    navigator.userAgent.search("Firefox" ) != -1 ||
//    navigator.userAgent.search("Safari"  ) != -1   )
  {
    n_Enrty_D = n_Enrty_D.nextSibling.nextSibling;
  }
</script>
```

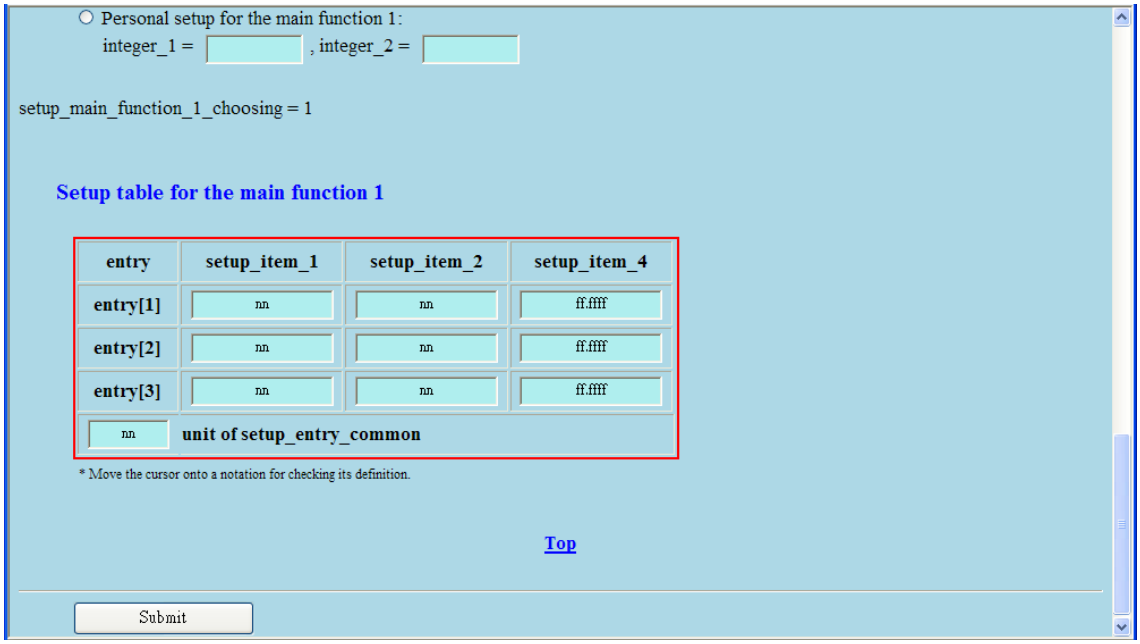


Figure 23: The 4th column of the setup table has been deleted row by row (cf. Figures 11a and 20a).

Chapter 4

Result Presentation

4.1 Running program

Template 47: Starting a program or modifying the setup

Script

```
<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes" &&
      $setup_checked == "yes"   )
  {
    if ($output_series == NULL)
    {
      echo '<script type="text/javascript">'                              . "\r\n";
      echo '  if (navigator.appName == "Microsoft Internet Explorer")'    . "\r\n";
      echo '  {'                                                          . "\r\n";
      echo '    window.location = "#start";'                              . "\r\n";
      echo '  }'                                                          . "\r\n";
      echo '</script>'                                                    . "\r\n";

      echo '<h3 id="start"> Start Program </h3>'                          . "\r\n";

      echo '<script type="text/javascript">'                              . "\r\n";
      echo '  if (navigator.userAgent.search("Firefox" ) != -1 || '       . "\r\n";
      echo '      navigator.userAgent.search("Safari"  ) != -1   )'       . "\r\n";
      echo '  {'                                                          . "\r\n";
      echo '    window.location = "#start";'                              . "\r\n";
      echo '  }'                                                          . "\r\n";
      echo '</script>'                                                    . "\r\n";

      echo '<h4> Check the above setup </h4>'                             . "\r\n";

      echo '<input type="submit" class="submit"'                          . "\r\n";
      echo '       name="start" value="Start" />'                         . "\r\n";
      echo '<br />'                                                       . "\r\n";

      echo '<br />'                                                       . "\r\n";
      echo '<input type="submit" class="submit"'                          . "\r\n";
      echo '       name="re_submit" value="Modify and re-submit" />'      . "\r\n";
      echo '<br />'                                                       . "\r\n";

      echo '<script type="text/javascript">'                              . "\r\n";
      echo '  if (navigator.userAgent.search("Netscape") != -1)'          . "\r\n";
      echo '  {'                                                          . "\r\n";
      echo '    window.location.hash = "#start";'                         . "\r\n";
      echo '  }'                                                          . "\r\n";
      echo '</script>'                                                    . "\r\n";

        .
        .
        .
    }
  }
```

For `main.php`, not `results.php`, cf. Template 54

Template 23

```
  elseif ($output_series == NULL)
  {
    echo '<input type="submit" class="submit" value="Submit" />'       . "\r\n";
    echo '<br />'                                                      . "\r\n";
  }
?>

</form>

        .
        .           Template 48
        .

        .
        .           Template 54
        .
```

cf. Template 2

Figure 24: Starting a program or modifying the setup.

Template 48: Copying uploaded files

Script

```
<?php
  if ($main_function  != NULL  &&
      $mode_checked   == "yes" &&
      $setup_checked  == "yes" &&
      $_POST["start"] != NULL    )          After "Start" clicking, not "Modify and re-submit"
  {
    include("main/setup_output_file.txt");   Template 50

    if ($function_choice == "function_user")
    {
        $main_folder
      = "../../../../../home/guest/clshan/main";   Folder of the main program

        $personal_file_folder_copy
      = $main_folder . "/" . $personal_file_folder;

        $cp_cmd
      = "cp " . $personal_file_folder      . "/" . $personal_function_file_copy . " "
              . $personal_file_folder_copy . "/" . "function_user.c";

      shell_exec("$cp_cmd");

      if ($function2_needed == "yes")
      {
          $cp_cmd
        = "cp " . $personal_file_folder . "/" . $personal_function2_file_copy . " "
                . $personal_file_folder . "/" . "function2_user.txt";


        shell_exec("$cp_cmd");
      }

      shell_exec("gcc -g -o main-web-user $main_folder/main-web.c -lm");
      shell_exec("./main-web-user");
    }                  Re-compile and execute the main program with user-uploaded file(s)

    else
    {
      shell_exec("./main-web");          Execute the default main program
    }
```

```
    if ($function_choice == "function_user")
    {
        $cp_cmd
      = "cp samples/sample-function_user.txt "
          . $personal_file_folder_copy . "/" . "function_user.c";

      shell_exec("$cp_cmd");

      if ($function2_needed == "yes")
      {
          $cp_cmd
        = "cp samples/sample-function2_user.txt "
            . $personal_file_folder . "/" . "function2_user.txt";

        shell_exec("$cp_cmd");
      }
    }

    include("main/setup_output_reload.txt");

    echo '<script type="text/javascript">'          . "\r\n";
    echo '  this.location.replace("results.php");' . "\r\n";
    echo '</script>'                                . "\r\n";
  }
?>
```

Copy the sample file(s) to replace the user-uploaded files

Template 52

Redirect to `results.php`

Template 49: sample-input_setup_web.txt (cf. Templates 50, 51 and 78)

Script

```
0  Main_function

   1   1,   main_function_choosing = 1 ;      0  ..._/_..._/_..._/_...

0  Main_function_1

   2   1,   mode_choosing          = 1 ;      0  ..._/_..._/_..._/_...

   2   2,   integer_1 = nn ;
   2   3,   integer_2 = nn ;

   2   4   1,   float_1_1 = ff.ffff ;
   2   4   2,   float_1_2 = ff.ffff ;

   2   5   1,   float_2_1 = ff.ffff ;
   2   5   2,   float_2_2 = ff.ffff ;

   2   6   1,   integer_3 = nn      ;
   2   6   2,   float_3   = ff.ffff ;

0  For_temporary_folders

   1   5   1,   personal_file_date = 100509 ;
   1   5   2,   personal_file_time = 071908 ;

   1   5   3,   plot_output_date   = 100509 ;
   1   5   4,   plot_output_time   = 082319 ;

   1   5   5,   random_gen         = 1920 ;
```

Template 50: setup_output_file.txt (cf. Templates 49, 52 and 78)

Script

```
<?php
  $setup_output = fopen("tmp/input_setup_web/input_setup_web.txt", "w");

  fputs($setup_output, sprintf("\n"));

  /* Main function ************************************************************/

  fputs($setup_output, sprintf("0  Main_function\n"));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   1   1,   main_function_choosing = %d ;\n",
                $main_function_choosing));

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));

  /* Main_function_1 **********************************************************/

  fputs($setup_output, sprintf("0  Main_function_1\n"));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   2   1,   mode_choosing          = %d ;\n",
                $mode_choosing));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   2   2,   integer_1 = %s ;\n",          Not %d!
                $integer_1));
  fputs($setup_output,
        sprintf("   2   3,   integer_2 = %s ;\n",
                $integer_2));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   2   4   1,    float_1_1 = %s ;\n",          Not %f!
                $float_1_1));
  fputs($setup_output,
        sprintf("   2   4   2,    float_1_2 = %s ;\n",
                $float_1_2));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   2   5   1,    float_2_1 = %s ;\n",
                $float_2_1));
  fputs($setup_output,
        sprintf("   2   5   2,    float_2_2 = %s ;\n",
                $float_2_2));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   2   6   1,    integer_3 = %s ;\n",
                $integer_3));

  fputs($setup_output,
        sprintf("   2   6   2,    float_3   = %s ;\n",
                $float_3));

  fputs($setup_output, sprintf("\n"));
```

```
  /* For temporary folders *****************************************************/

  fputs($setup_output,
        sprintf("0  For_temporary_folders\n"));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   1   5   1,   personal_file_date = %s ;\n",
                $personal_function_date));
  fputs($setup_output,
        sprintf("   1   5   2,   personal_file_time = %s ;\n",
                $personal_function_time));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   1   5   3,   plot_output_date   = %s ;\n",
                $plot_output_date));
  fputs($setup_output,
        sprintf("   1   5   4,   plot_output_time   = %s ;\n",
                $plot_output_time));
  fputs($setup_output, sprintf("\n"));

  $random_gen = ( (gmdate(d) . gmdate(H)) * (gmdate(i) . gmdate(s)) ) % 10000;

  if ($random_gen == 0)
  {
    $random_gen = 909;
  }

  elseif ($random_gen >=    1 &&
          $random_gen <    10   )
  {
    $random_gen = $random_gen * 909;
  }

  elseif ($random_gen >=   10 &&
          $random_gen <   100   )
  {
    $random_gen = $random_gen * 101;
  }

  elseif ($random_gen >=  100 &&
          $random_gen <  1000   )
  {
    $random_gen = $random_gen + ($random_gen / 100) * 1000;
  }

  fputs($setup_output,
        sprintf("   1   5   5,   random_gen         = %d ;\n",
                $random_gen));

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));

  /*****************************************************************************/

  fclose($setup_output);
?>
```

Not %d!

Template 51: sample-input_setup_web_reload.txt (cf. Templates 49 and 52)

Script

```
<?php
   $output_series = "output-100509-082319" ;

// Main_function

   $main_function_choosing  = 1 ;      //  ..._/_..._/_..._/_...

// Main_function_1

   $mode_choosing           = 1 ;      //  ..._/_..._/_..._/_...

   $personal_function_file  = "tmp/uploaded_functions/function_user.txt"  ;
   $personal_function2_file = "tmp/uploaded_functions/function2_user.txt" ;

   $integer_1 = nn ;
   $integer_2 = nn ;

   $float_1_1 = 0.00001 ;              //  Replacement_for_float_1_1_=_0!!
   $float_1_2 = ff.ffff ;

   $float_2_1 = ff.ffff ;
   $float_2_2 = ff.ffff ;

   $integer_3 = nn      ;
   $float_3   = ff.ffff ;

// For_temporary_folders

   $personal_file_date = "100509" ;
   $personal_file_time = "071908" ;

   $plot_output_date   = "100509" ;
   $plot_output_time   = "082319" ;
?>
```

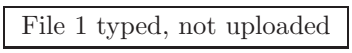
See Template 52

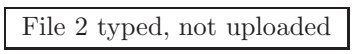
Template 52: setup_output_reload.txt (cf. Templates 50 and 51)

Script

```
<?php
  $setup_output = fopen("tmp/input_setup_web/input_setup_web_reload.txt", "w");

  fputs($setup_output, sprintf("<?php\n"));
  fputs($setup_output, sprintf("\n"));

  /*****************************************************************************/

  fputs($setup_output,
        sprintf("   \$output_series = \"plot-%s-%s\" ;\n",
                    $plot_output_date, $plot_output_time));

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));

  /* Main function ************************************************************/

  fputs($setup_output, sprintf("//  Main_function\n"));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   \$main_function_choosing  = %d ;\n",
                    $main_function_choosing));

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));
```

```
/* main_function_1 ************************************************************/

fputs($setup_output, sprintf("//  Main_function_1\n"));
fputs($setup_output, sprintf("\n"));

fputs($setup_output,
      sprintf("   \$mode_choosing           = %d ;\n",
                  $mode_choosing));

fputs($setup_output, sprintf("\n"));

if ($function_choice == "function_user")
{
  if ($personal_function_file != NULL                          &&
      $personal_function_file != $personal_function_file_copy   )
  {
    fputs($setup_output,
          sprintf("  \$personal_function_file  = \"%s\" ;\n",
                      $personal_function_file));

    fputs($setup_output, sprintf("\n"));
  }

  if ($function2_needed == "yes")
  {
    if ($personal_function2_file != NULL                          &&
        $personal_function2_file != $personal_function2_file_copy   )
    {
      fputs($setup_output,
            sprintf("  \$personal_function2_file = \"%s\" ;\n",
                        $personal_function2_file));

      fputs($setup_output, sprintf("\n"));
    }
  }

  if ($personal_function_file != NULL                          &&
      $personal_function_file == $personal_function_file_copy   )
  {
    fputs($setup_output,
          sprintf("  \$personal_function_text  = \"%s\" ;\n",
                      $personal_function_text));

    fputs($setup_output, sprintf("\n"));
  }

  if ($function2_needed == "yes")
  {
    if ($personal_function2_file != NULL                          &&
        $personal_function2_file == $personal_function2_file_copy   )
    {
      fputs($setup_output,
            sprintf("  \$personal_function2_text = \"%s\" ;\n",
                        $personal_function2_text));

      fputs($setup_output, sprintf("\n"));
    }
  }
}
```





```
fputs($setup_output,
      sprintf("   \$integer_1 = %s ;\n", $integer_1));
fputs($setup_output,
      sprintf("   \$integer_2 = %s ;\n", $integer_2));
fputs($setup_output, sprintf("\n"));

if ($float_1_1 != 0.0)
{
  fputs($setup_output,
        sprintf("   \$float_1_1 = %s ;\n", $float_1_1));
}
else
{
  fputs($setup_output,
        sprintf("   \$float_1_1 = 0.00001 ;\n"));
}

if ($float_1_2 != 0.0)
{
  fputs($setup_output,
        sprintf("   \$float_1_2 = %s ;\n", $float_1_2));
}
else
{
  fputs($setup_output,
        sprintf("   \$float_1_2 = 0.00001 ;\n"));
}

fputs($setup_output, sprintf("\n"));

if ($float_2_1 != 0.0)
{
  fputs($setup_output,
        sprintf("   \$float_2_1 = %s ;\n", $float_2_1));
}
else
{
  fputs($setup_output,
        sprintf("   \$float_2_1 = 0.00001 ;\n"));
}

if ($float_2_2 != 0.0)
{
  fputs($setup_output,
        sprintf("   \$float_2_2 = %s ;\n", $float_2_2));
}
else
{
  fputs($setup_output,
        sprintf("   \$float_2_2 = 0.00001 ;\n"));
}

fputs($setup_output, sprintf("\n"));
```

```
  fputs($setup_output,
        sprintf("   \$integer_3 = %s ;\n", $integer_3));

  if ($float_3 != 0.0)
  {
    fputs($setup_output,
          sprintf("   \$float_3   = %s ;\n", $float_3));
  }
  else
  {
    fputs($setup_output,
          sprintf("   \$float_3 = 0.00001 ;\n"));
  }

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));

  /* For temporary folders ***************************************************/

  fputs($setup_output,
        sprintf("//  For_temporary_folders\n"));
  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   \$personal_file_date = \"%s\" ;\n",          Not %d!
                 $personal_file_date));
  fputs($setup_output,
        sprintf("   \$personal_file_time = \"%s\" ;\n",
                 $personal_file_time));

  fputs($setup_output, sprintf("\n"));

  fputs($setup_output,
        sprintf("   \$plot_output_date   = \"%s\" ;\n",
                 $plot_output_date));
  fputs($setup_output,
        sprintf("   \$plot_output_time   = \"%s\" ;\n",
                 $plot_output_time));

  fputs($setup_output, sprintf("\n"));
  fputs($setup_output, sprintf("\n"));

  /*****************************************************************************/

  fputs($setup_output, sprintf("?>\n"));
  fputs($setup_output, sprintf("\n"));

  fclose($setup_output);
?>
```

4.2 Result presentation

Template 53: Reloading the setup

Script in `main.php`

```
<?php
  /* Only for "results.php" **********************************/
/*
  include("tmp/input_setup_web/input_setup_web_reload.txt");
*/
?>

<form action="main.php" method="post" enctype="multipart/form-data">

      .
      .          Template 2
      .
```

Script in `results.php`

```
<?php
  /* Only for "results.php" **********************************/

  include("tmp/input_setup_web/input_setup_web_reload.txt");          Template 51

?>

<form action="main.php" method="post" enctype="multipart/form-data">

      .
      .          Template 2
      .
```

This is the unique required modification from `main.php` to `results.php`.

Template 54: Going to "Results" (cf. Templates 6 and 9)

Script

```
<?php
  if ($main_function != NULL  &&
      $mode_checked  == "yes" &&
      $setup_checked == "yes" &&
      $output_series != NULL    )
  {
    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.appName == "Microsoft Internet Explorer")'    . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#results";'                            . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

    echo '<h3 id="results"> Results </h3>'                              . "\r\n";

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Firefox" ) != -1 || '       . "\r\n";
    echo '      navigator.userAgent.search("Safari"  ) != -1   )'       . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location = "#results";'                            . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

        .
        .
        .

        .
        .
        .

    echo '<script type="text/javascript">'                              . "\r\n";
    echo '  if (navigator.userAgent.search("Netscape") != -1)'          . "\r\n";
    echo '  {'                                                          . "\r\n";
    echo '    window.location.hash = "#results";'                       . "\r\n";
    echo '  }'                                                          . "\r\n";
    echo '</script>'                                                    . "\r\n";

    echo '<h5> <a href="#main">Top</a> </h5>'                           . "\r\n";
    echo '<hr />'                                                       . "\r\n";
  }
?>
```

For `results.php`, not `main.php`, cf. Template 47

Template 55

Template 56

Template 55: In forms of plots and tables

Script

```
<?php
    if ($main_function == "main_function_1" ||
        $main_function == "main_function_2"   )
    {
      include("setup/setup-plotNo.txt");                    Template 57

      for ($n_plot = 1; $n_plot <= $output_plot_No; $n_plot ++)
      {
        switch ($main_function)
        {
          case "main_function_1":
            echo '<h4> ..... </h4>' . "\r\n";

            include("main/plot_output.txt");                          Templates 59 and 60
            include("captions/caption-main_function_1.txt");

            break;

              .
              .
              .
        }
      }
    }

    elseif ($main_function == "main_function_3" ||
            $main_function == "main_function_4"   )
    {
      include("setup/setup-tableNo.txt");                   Template 58

      for ($n_table = 1; $n_table <= $output_table_No; $n_table ++)
      {
          $plot_output_file_copy                    Result output by the main program in PHP syntax
        = $plot_output_file . "-0.txt";

        include("$plot_output_folder/" . $plot_output_file_copy);      Read the output results

        switch ($main_function)
        {
          case "main_function_3":
            echo '<h4> ..... </h4>' . "\r\n";

            include("tables/table-output_main_function_3.txt");
            include("captions/caption-main_function_3.txt");

            break;

              .
              .
              .
        }
      }
    }
?>
```

Template 56: Downloadable output data files (cf. Template 59)

Script

```
<?php
    echo '<h4> Data </h4>'                                    . "\r\n";

    echo '<span class="plot_link">'                           . "\r\n";
    echo ' <b> TXT: </b>'                                     . "\r\n";
    echo ' <a href="tmp/output_results/';
    echo      $plot_output_file . '.txt" target="_blank">'    . "\r\n";
    echo      $plot_output_file . '.txt</a>'                  . "\r\n";
    echo '</span>'                                            . "\r\n";
    echo '<br />'                                             . "\r\n";
    echo '<br />'                                             . "\r\n";
?>
```

Template 57: setup-plotNo.txt (cf. Template 58)

Script

```
<?php

/* ------------------------------------------- */
//
// Set the number of output plots
//
/* ------------------------------------------- */

  if ($main_function == "main_function_1")
  {
    $output_plot_No = 1;
  }

/* ------------------------------------------- */

  if ($main_function == "main_function_2")
  {
    $output_plot_No = 2;
  }

/* ------------------------------------------- */

  if ($main_function == "main_function_3")
  {
    $output_plot_No = 0;
  }

/* ------------------------------------------- */

  if ($main_function == "main_function_4")
  {
    $output_plot_No = 0;
  }

/* ------------------------------------------- */

?>
```

Template 58: setup-tableNo.txt (cf. Template 57)

Script

```
<?php

/* ---------------------------------------------- */
//
// Set the number of output tables
//
/* ---------------------------------------------- */

  if ($main_function == "main_function_1")
  {
    $output_table_No = 0;
  }

/* ---------------------------------------------- */

  if ($main_function == "main_function_2")
  {
    $output_table_No = 0;
  }

/* ---------------------------------------------- */

  if ($main_function == "main_function_3")
  {
    $output_table_No = 2;
  }

/* ---------------------------------------------- */

  if ($main_function == "main_function_4")
  {
    $output_table_No = 1;
  }

/* ---------------------------------------------- */

?>
```

Template 59: plot_output.txt (cf. Template 56)

Script

```
<span class="plot_link">
 <b> PS: </b>
 <a href="<?php echo $plot_output_folder . '/' .
                     $plot_output_file   . '-' . $n_plot; ?>.ps" target="_blank">
          <?php echo $plot_output_file   . '-' . $n_plot; ?>.ps</a>
</span>
<br />

<span class="plot_link">
 <b> EPS: </b>
 <a href="<?php echo $plot_output_folder . '/' .
                     $plot_output_file   . '-' . $n_plot; ?>.eps" target="_blank">
          <?php echo $plot_output_file   . '-' . $n_plot; ?>.eps</a>
</span>
<br />

<span class="plot_link">
 <b> PDF: </b>
 <a href="<?php echo $plot_output_folder . '/' .
                     $plot_output_file   . '-' . $n_plot; ?>.pdf" target="_blank">
          <?php echo $plot_output_file   . '-' . $n_plot; ?>.pdf</a>
</span>
<br />

<span class="plot_link">
 <b> PNG: </b>
 <a href="<?php echo $plot_output_folder . '/' .
                     $plot_output_file   . '-' . $n_plot; ?>.png" target="_blank">
          <?php echo $plot_output_file   . '-' . $n_plot; ?>.png</a>
</span>
<br />

<br />
<span class="plot_link">
 <b> Plot preview </b>
</span>
<br />
 <a href="<?php echo $plot_output_folder . '/' .
                     $plot_output_file   . '-' . $n_plot; ?>.png"
    target="_blank">
    <img class="output_plot"
         src="<?php echo $plot_output_folder . '/' .
                         $plot_output_file   . '-' . $n_plot; ?>.png"
         alt="<?php echo $plot_output_file   . '-' . $n_plot; ?>.png" /></a>
<br />

<span class="credit">
 <b> Plot credit: </b>
 XXXXXX   http://myweb.ncts.ncku.edu.tw/xxxxxx/
</span>
<br />

<br />
```

Template 60: plot_output_animation.txt (cf. Template 59)

Script

```
<script type="text/javascript">
  var n_plot_animation = 2;

  function plot_change()
  {
    document.getElementById("plot_output_animation").src =
    <?php
      echo '"' . $plot_output_folder . '/' . $plot_output_file . '-';
    ?>" + n_plot_animation + ".png";

    if (n_plot_animation == 4)
    {
      n_plot_animation = 1;
    }

    else
    {
      n_plot_animation = n_plot_animation + 1;
    }
  }

  function plot_animate()
  {
    var t = setTimeout("plot_change()", 1000);
  }
</script>

<span class="plot_link">
 <b> Plot animation </b>
</span>
<br />
    <img class="output_plot"
         id="plot_outout_animation"
         src="<?php echo $plot_output_folder . '/' .
                         $plot_output_file   . '-' . $n_plot; ?>.png"
         alt="<?php echo $plot_output_file   . '-' . $n_plot; ?>.png"
         onload="plot_animate()" />
<br />

<span class="credit">
 <b> Plot credit: </b>
 XXXXXX   http://myweb.ncts.ncku.edu.tw/xxxxxx/
</span>
<br />

<br />
<br />
```

Results

Distribution of generated numbers

PS: plot-100619-153626-1.ps
EPS: plot-100619-153626-1.eps
PDF: plot-100619-153626-1.pdf
PNG: plot-100619-153626-1.png

Plot preview

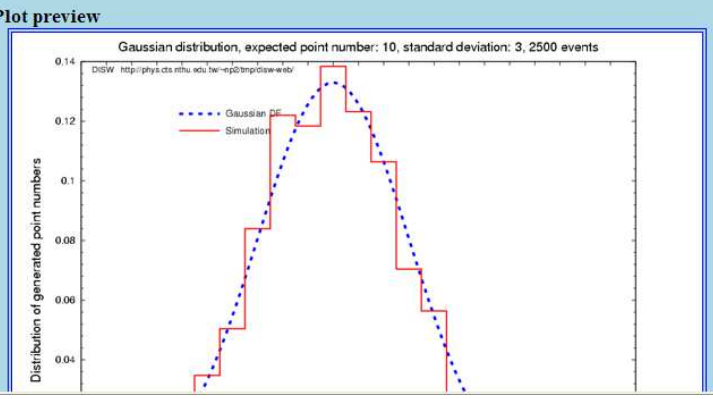


Figure 25a: Result in form of plots.

Top

Results

Numerical integration by the Monte-Carlo method

Integral	Median	Mean
Central	3.12674	3.12699
1σ lower bound	3.07688	3.07636
1σ upper bound	3.17661	3.17762

Data

TXT: plot-100619-151641.txt

Top

Figure 25b: Results in form of a table.

Chapter 5

Miscellaneous

5.1 File deleting

Template 61: eraser.php

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> File Eraser </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<link rel="stylesheet" type="text/css" href="main/main.css" />

</head>

<body class="en">

<h3 class="center"> File Eraser </h3>

<?php
  shell_exec("rm -r tmp/input_setup_web/*.txt");

  shell_exec("rm -r tmp/output_plots/*.eps");
  shell_exec("rm -r tmp/output_plots/*.ps");
  shell_exec("rm -r tmp/output_plots/*.pdf");
  shell_exec("rm -r tmp/output_plots/*.png");
  shell_exec("rm -r tmp/output_plots/*.txt");

  shell_exec("rm -r tmp/output_results/*.txt");

  shell_exec("rm -r tmp/uploaded_files/*.txt");
?>

</body>

</html>
```

5.2 Redirection

Template 62: Redirection to the parent directory

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

</head>

<body onload="this.location.replace('../')">

</body>

</html>
```

Template 63: Redirection to a web page

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

</head>

<body onload="http://myweb.ncts.ncku.edu.tw/xxxxxx/">

</body>

</html>
```

Template 64: Redirection to a web page with countdown

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> </title>

<meta id="author" content="Chung-Lin Shan" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<meta http-equiv="Refresh" content="15; url='myweb.ncts.ncku.edu.tw/xxxxxx/'" />

</head>

<body onload="countdown()" style="background-color: #AFEEEE">

<script type="text/javascript">
  var show_rest_time;
  var rest_time = 15;

  function countdown()
  {
    if (rest_time == 1)
    {
      document.getElementById("rest_time").innerHTML = rest_time + " second";
    }

    else
    {
      document.getElementById("rest_time").innerHTML = rest_time + " seconds";
    }

    if (rest_time >= 1)
    {
      rest_time = rest_time - 1;

      show_rest_time = setTimeout("countdown()", 1000);
    }
  }
</script>

<p style="font-family: 'Times New Roman'; font-size: 14pt;
          line-height: 18pt; text-align: center">
 <br />
 This page will be redirected in <span id="rest_time"></span>,
 or you could click the URL below.
 <br />
 You could also bookmark this URL for your next visit:
 <a href="http://myweb.ncts.ncku.edu.tw/xxxxxx/">http://myweb.ncts.ncku.edu.tw/xxxxxx/</a>
</p>

</body>

</html>
```

Appendix A

Some Auxiliary Files

A.1 main.css

Template 65: Headings

Definitions

```
h1              {font-size: 26pt; color: blue;  text-align: center}
h2              {font-size: 23pt; color: blue;  text-align: center}
h3              {font-size: 18pt; color: blue;  text-align: left;  margin-left:   5pt}
h4              {font-size: 15pt; color: blue;  text-align: left;  margin-left:  25pt}
h5              {font-size: 13pt; color: blue;  text-align: center}
h6              {font-size: 12pt; color: black; text-align: right; margin-right: 25pt}
```

Template 66: form

Definitions

```
form            {font-size: 13pt; line-height: 18pt}

fieldset        {margin-left: 36pt;
                 border-style: solid; border-color: transparent}
```

Template 67: input

Definitions

```
input.table     {line-height: 15pt; text-align: center;
                 margin-left:  5pt; margin-right: 5pt; height: 15pt; width: 90pt;
                 background-color: #AFEEEE}
                 /* PaleTurquoise, RGB={175, 238, 238} */

input.upload    {line-height: 15pt; text-align: left;
                 height: 19.2pt; width: 200pt;
                 background-color: #AFEEEE}

input.text      {line-height: 15pt; text-align: center;
                 margin-left:  5pt; margin-right: 5pt; height: 15pt; width: 40pt;
                 background-color: #AFEEEE}

input.submit    {font-size: 11pt;
                 margin-left: 36pt; margin-right: 5pt; height: 22pt; width: 120pt}

textarea        {height: 150pt; width: 300pt; background-color: #AFEEEE}

select          {padding-left: 3pt; height: 15pt; width: 50pt;
                 background-color: #AFEEEE}
```

Template 68: li

Definitions

```
ul              {list-style-type: disc;    margin-left:  0pt; margin-right: 25pt}
ol              {list-style-type: decimal; margin-left:  5pt; margin-right: 25pt}

li              {line-height: 20pt; margin-left: 25pt; margin-right: 25pt}
```

Template 69: table

Definitions

```
table           {line-height: 24pt; margin-left: 36pt;
                 border-style: solid; border-color: blue}

tr              {text-align: center; width: 100pt}

td              {text-align: center; width: 100pt}
td.result       {background-color: #AFEEEE}
```

Template 70: img

Definitions

```
img.eq            {margin-left: 25pt;
                   border-top-width:  5pt; border-bottom-width: 4pt;
                   border-left-width: 0pt; border-right-width:  0pt;
                   border-style: solid; border-color: transparent}

img.eq-s          {border-width: 0px; border-style: solid; border-color: blue}

img.output_plot   {margin-left: 50pt; height: 320pt; width: auto;
                   border-width: 4px; border-style: double; border-color: blue}
```

Template 71: p

Definitions

```
body              {background-color: #ADD8E6}
                  /* lightblue, RGB={173, 216, 230} */

div               {font-size: 13pt; text-indent: 20pt; line-height: 16pt}

p                 {color: black; text-align: justify;
                   margin-left: 25pt; margin-right: 25pt}

p.EqCard          {font-size: 13pt}

p.caption         {font-size: 13pt; line-height: 20pt;
                   margin-left: 36pt; width: 600pt}

p.date            {text-align: right; margin-right: 50pt}
```

Template 72: font

Definitions

```
 .en              {font-family: "Times New Roman"}

 .bf              {font-weight: bold}
 .it              {font-style:  italic}
 .sf              {font-family: sans-serif}
```

Template 73: color

Definitions

```
 .black           {color: black}
 .white           {color: white}

 .red             {color: red}

 .green           {color: green}

 .blue            {color: blue}
 .lightblue       {color: #ADD8E6}
```

Template 74: text-align

Definitions

```
 .center          {text-align: center}
 .left            {text-align: left}
 .right           {text-align: right}
```

Template 75: a

Definitions

```
a:visited          {color: #00008B}                    /* darkblue, RGB={0, 0, 139} */
a.eq               {color: blue; text-decoration: none}
```

Template 76: Footnotes

Definitions

```
 .def              {line-height: 20pt; margin-left: 40pt}
 .plot_link        {font-size: 13pt; line-height: 17pt; margin-left: 40pt}
 .credit           {font-size: 11pt; line-height: 13pt; margin-left: 60pt}
```

A.2 setup-reader.c

Template 77: Including setup-reader.c

Script

```
personal_setup = fopen("tmp/input_setup_web/input_setup_web.txt", "r");

  #include "main-sub/setup-reader.c"          Template 78

fclose(personal_setup);
```

Template 78: setup-reader.c (cf. Template 49)

Script

```
/* ------------------------------------------- */
//
// A subroutine for reading input setup from the website
//
/* ------------------------------------------- */

do
{
  fscanf(personal_setup, "%d", &read_setup_category);

  switch (read_setup_category)
  {

/* ------------------------------------------- */
//
// For users' comments
//

    case 0:
      fscanf(personal_setup, "%*s");

      break;
```

```
/* ------------------------------------------ */
//
// Setup for main functions
//

    case 1:
      fscanf(personal_setup, "%d", &read_setup_item);

      switch (read_setup_item)
      {
        case 1:
          fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);

          switch (read_setup_data_int)
          {
            case 1:
              main_function = "main_function_1";
              break;

            case 2:
              main_function = "main_function_2";
              break;

            case 3:
              main_function = "main_function_3";
              break;

            case 4:
              main_function = "main_function_4";
              break;

            default:
              return 0;
          }

          break;

            .
            .
            .
```

```
        case 5:
          fscanf(personal_setup, "%d", &read_setup_entry);
          fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);

          switch (read_setup_entry)
          {
            case 1:
              sprintf(read_setup_data_date, "%d", read_setup_data_int);

              if (read_setup_data_int < 100000)
              {
                strcpy(personal_file_date, "0");
                strcat(personal_file_date, read_setup_data_date);
              }
              else
              {
                strcpy(personal_file_date, read_setup_data_date);
              }

              break;

            case 2:
              sprintf(read_setup_data_date, "%d", read_setup_data_int);

              if (read_setup_data_int < 10)
              {
                strcpy(personal_file_time, "00000");
                strcat(personal_file_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 100)
              {
                strcpy(personal_file_time, "0000");
                strcat(personal_file_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 1000)
              {
                strcpy(personal_file_time, "000");
                strcat(personal_file_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 10000)
              {
                strcpy(personal_file_time, "00");
                strcat(personal_file_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 100000)
              {
                strcpy(personal_file_time, "0");
                strcat(personal_file_time, read_setup_data_date);
              }
              else
              {
                strcpy(personal_file_time, read_setup_data_date);
              }

              break;
```

```
            case 3:
              sprintf(read_setup_data_date, "%d", read_setup_data_int);

              if (read_setup_data_int < 100000)
              {
                strcpy(plot_output_date, "0");
                strcat(plot_output_date, read_setup_data_date);
              }
              else
              {
                strcpy(plot_output_date, read_setup_data_date);
              }

              break;

            case 4:
              sprintf(read_setup_data_date, "%d", read_setup_data_int);

              if (read_setup_data_int < 10)
              {
                strcpy(plot_output_time, "00000");
                strcat(plot_output_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 100)
              {
                strcpy(plot_output_time, "0000");
                strcat(plot_output_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 1000)
              {
                strcpy(plot_output_time, "000");
                strcat(plot_output_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 10000)
              {
                strcpy(plot_output_time, "00");
                strcat(plot_output_time, read_setup_data_date);
              }
              else
              if (read_setup_data_int < 100000)
              {
                strcpy(plot_output_time, "0");
                strcat(plot_output_time, read_setup_data_date);
              }
              else
              {
                strcpy(plot_output_time, read_setup_data_date);
              }

              break;
```

```
            case 5:
              random_gen = read_setup_data_int;

              break;

            default:
              return 0;
          }

          break;

            .
            .
            .

        default:
          return 0;
      }

      break;
```

```
/* ----------------------------------------- */
//
// Setup for "main_function_1"
//

    case 2:
      fscanf(personal_setup, "%d", &read_setup_item);

      switch (read_setup_item)
      {
        case 1:
          fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);

          switch (read_setup_data_int)
          {
            case 1:
              mode_choice = "mode_choice_1";
              break;

            case 2:
              mode_choice = "mode_choice_2";
              break;

            case 3:
              mode_choice = "mode_choice_3";
              break;

            case 4:
              mode_choice = "mode_choice_4";
              break;

            default:
              return 0;
          }

          break;

        case 2:
          fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);
          integer_1 = read_setup_data_int;

          break;

        case 3:
          fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);
          integer_2 = read_setup_data_int;

          break;
```

```
        case 4:
          fscanf(personal_setup, "%d", &read_setup_entry);
          fscanf(personal_setup, "%*s%*s%*s%f%*s", &read_setup_data_float);

          switch (read_setup_entry)
          {
            case 1:
              float_1_1 = read_setup_data_float;
              break;

            case 2:
              float_1_2 = read_setup_data_float;
              break;

            default:
              return 0;
          }

          break;

        case 5:
          fscanf(personal_setup, "%d", &read_setup_entry);
          fscanf(personal_setup, "%*s%*s%*s%f%*s", &read_setup_data_float);

          switch (read_setup_entry)
          {
            case 1:
              float_2_1 = read_setup_data_float;
              break;

            case 2:
              float_2_2 = read_setup_data_float;
              break;

            default:
              return 0;
          }

          break;

        case 6:
          fscanf(personal_setup, "%d", &read_setup_entry);

          switch (read_setup_entry)
          {
            case 1:
              fscanf(personal_setup, "%*s%*s%*s%d%*s", &read_setup_data_int);
              integer_3 = read_setup_data_int;
              break;

            case 2:
              fscanf(personal_setup, "%*s%*s%*s%f%*s", &read_setup_data_float);
              float_3   = read_setup_data_float;
              break;

            default:
              return 0;
          }

          break;
```

```
/* ----------------------------------------- */

    default:
      return 0;
  }
}
while (!feof(personal_setup));
```

Appendix B

Basic Commands for Website Building

In this chapter I give some basic and frequently used commands for building a website. Full website building tutorials with more detailed explanations and interactive examples can be found in Ref. [1]. Two validator links for validating the HTML and CSS syntax of a web page are also given in Ref. [2].

B.1 HTML (Hyper Text Markup Language) and XHTML (EXtensible HTML)

B.1.1 html

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

  <head>

    .
    .
    .

  </head>


  <body>

    .
    .
    .

  </body>

</html>
```

Modification

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

Modification

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

B.1.2 head

Script

```
<head>

  <title> Title of the web page </title>

  <meta id="author"               content="name(s) of author(s)" />
  <meta http-equiv="Content-Type" content="text/html; charset=uft-8" />
  <meta http-equiv="Refresh"      content="15; url='www.xxxxxx.xxx/xxxxxx/'" />

  <link rel="stylesheet"          type="text/css"
        href="folder of the css file/name of the css file.css" />

  <base href="http://www.xxxxxx.xxx/xxxxxx/" />
  <base target="_top" />

  <style type="text/css">
       .
       .
       .
  </style>

  <script type="text/javascript">
       .
       .
       .
  </script>

</head>
```

See Sec. B.2 for CSS

See Sec. B.1.8 for links

See Sec. B.2 for CSS

See Sec. B.3 for JavaScript

Modification

```
  <meta http-equiv="Content-Type" content="text/html; charset=big5" />
```

Modification

```
  <base target="_blank" />
```

Corresponding command for <base> in <body>

```
  <a href="http:">Description of this link</a>
```

B.1.3 Comments

Script

```
<!--   Comment line   -->

<!--
  Some comments ...
      .
      .
      .
      .
-->
```

See Secs. B.2.1, B.3.2, and B.5.2 for comments in CSS, JavaScript, and PHP, respectively.

B.1.4 Tags and elements

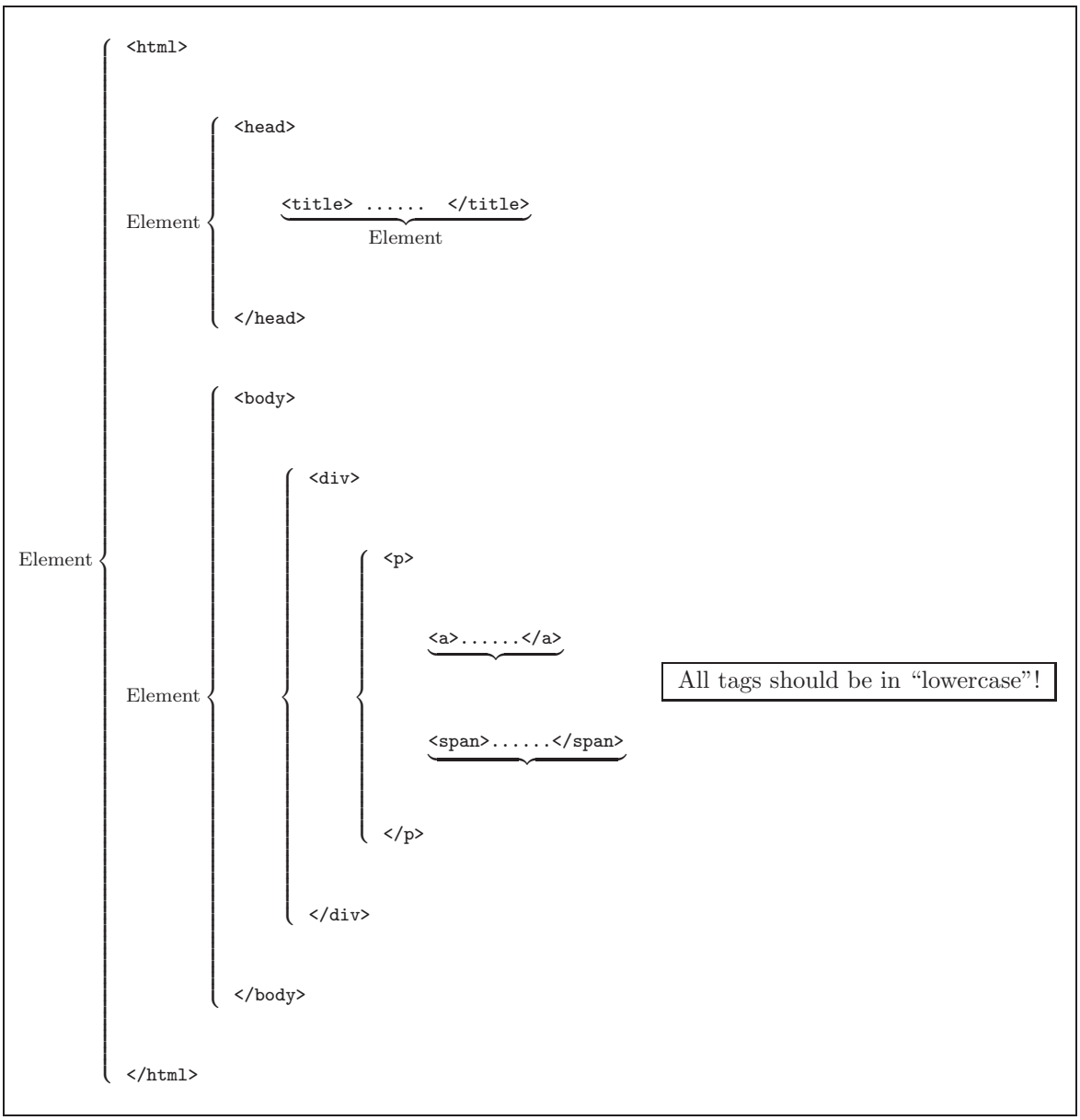
Start/opening tags

```
<html>, <head>, <body>,
<title>, <div>, <p>, <a>,
<span>
```

End/closing tags

```
</html>, </head>, </body>,
</title>, </div>, </p>, </a>,
</span>
```

Elements



See Sec. B.4.1 for the definitions of a “node” and the “node tree” in HTML DOM.

Empty elements (without closing tags)

```
<meta />, <link />,
<br />, <hr />, <img />, <input />,
<area />, <col />, <frame />
```

B.1.5 Attributes

Script

```
<tag type="type choice of this tag"

     id="id of this tag"
     name="name of this tag"

     value="value given for this tag"

     class="specified class (for this tag)"
     style="specified style for this tag"

     (/) >
```

Both single ('...') or double ("...") quotes can be used.

All attributes should be in "lowercase"!

See Sec. B.2 for CSS

See Secs. B.1.8, B.1.9, and B.1.12 for some specified attributes combined with the `<a>`, the `<img>`, and the `<input type="radio">`, the `<input type="checkbox">` as well as with the `<option>` tags.

B.1.6 Headings

Script

```
<body>

  <h1> Main Title of the Website </h1>

  <h2> Title of the web page </h2>

  <hr />

  <h3> Main title of the category </h3>
  <h4> Title of blocks in the category </h4>

  <hr />

  <h5> Title of the section </h5>

  <div>

    <h6> Title of the paragraph </h6>

    <p>
      Some sentences ... <br />
      Some sentences ... <br />

      <span> Some sentences ... </span>
    </p>

    <hr />

  </div>

</body>
```

B.1.7 Text formatting

Bold face

```
<b> Bold face </b>
<strong> Bold face </strong>
```

Italic

```
<i> Italic </i>
<em> Italic </em>
```

Resize

```
<big> Text with a bigger font size </big>
<small> Text with a smaller font size </small>
```

Super-/Subscript

```
x<sup>n</sup>   ⟹   x^n
x<sub>n</sub>   ⟹   x_n
```

Inserted and deleted texts

```
<ins> XXXXXX </ins>   ⟹   XXXXXX
<del> XXXXXX </del>   ⟹   ~~XXXXXX~~
```

Acronym and abbreviations

```
<acronym title="complete words for the acronym">      An acronym      </acronym>
<abbr    title="complete words for the abbreviation"> An abbreviation </abbr>
```

Preformatted text

```
<pre>
  Some script ...                                  Some script ...
    Some script with a larger indent...     ⟹       Some script with a larger indent...
      Some script with the largest indent...           Some script with the largest indent...
</pre>
```

B.1.8 Links and the anchor a

Script

```
<a href="http://www.xxxxxx.xxx/xxxxxx/xxx.html"
   href="../xxxxxx/xxx.html"

   href="../xxxxxx/xxx.html#xxxxxx"
   href="#xxxxxx"

   target="_top/_blank">
   Description of this link ......</a>
```

Link for sending e-mails

```
<a href="mailto:xxxxxx@xxxxxx.xxx.xx?
         cc=yyyyyy@yyyyyy.yyy.yy&
         bcc=zzzzzz@zzzzzz.zzz.zz&
         subject=......%20......%20......&
         body=text of the e-mail">
   Send e-mail to some body</a>
```

See Sec. B.5.11 for e-mail sending in PHP.

B.1.9 img

Script

```
<img src="xxxxxx.jpg"
     alt="description of the image"

     height="height of the image"
     width="width of the image"

     border="width of the border of the image"
     align="top/middle/bottom"

     / >
```

Script

```
<img src="xxxxxx.jpg"
      .
      .
      .
     usemap=#name of the used map />

<map name="name of the used map">

  <area shape="rect/circle"
        coords="x_1,y_1,x_2,y_2/x_0,y_0,r"
        href="......"
        />

</map>
```

Link with an image

```
<a href="../xxxxxx/xxxxxx.jpg"
   target="_blank">
   <img src="../xxxxxx/xxxxxx.jpg" /><a>
```

Link for sending e-mails with an envelope icon

```
<a href="mailto:xxxxxx@xxxxxx.xxx.xx?
         cc=yyyyyy@yyyyyy.yyy.yy&
         bcc=zzzzzz@zzzzzz.zzz.zz&
         subject=......%20......%20......&
         body=text of the e-mail">
   <img src="icons/envelope.gif"
        alt="Send E-Mail"
        style="border: 0; width: 32px; height: 32px" /></a>
```

B.1.10 Lists ol, ul and li

Ordered list

```
<ol type="1/A/a/I/i">

  <li> ......
       </li>
  <li> ......
       </li>

</ol>
```

Unordered list

```
<ul type="disc/circle/square">

  <li> ......
       </li>
  <li> ......
       </li>

</ul>
```

B.1.11 form and fieldset

Script

```
<form>

  <fieldset>
    <legend> Title of this input field </legend>
        .
        .
        .
  </fieldset>


  <fieldset>
        .
        .
        .
  </fieldset>

</form>
```

See Sec. B.5.8 for the complete script for `<form>` tag.

B.1.12 input, select, and textarea

Script

```
<input type="text"
       type="password"

       type="radio"    (checked) (disabled)
       type="chechbox" (checked) (disabled)

       type="file"

       type="button"   value="Yes!"
       type="image"    src="../xxxxxx/xxxxxx.jpg"

       type="submit"   value="Submit"
       type="reset"    value="Reset"

       type="hidden"
       />
```

See Secs. B.5.9 and B.5.10 for file handling and uploading

See Sec. B.1.9

Script

```
<select name="the name of this seletion">

  <optgroup label="label for this category"

    <option value="the value of this option" (selected)>
          the value of this option
    </option>

    <option value="the value of this option">
          the value of this option
    </option>

  </optgroup>

  <optgroup label="label for this category"

    <option value="the value of this option" (selected)>
          the value of this option
    </option>

  </optgroup>

</select>
```

Script

```
<textarea>
  Some text ...
      .
      .
      .
</textarea>
```

Script

```
<label for="the id of the specified item">
  Some text/Description of the specified item
</label>

<input id="an id for this item" />
```

B.1.13 table

Script

```
<table border="width of the border of the tabel"
       cellspacing="distance between two cells"
       cellpadding="distance between the inner border of the cell and the text"

       frame="border/box"
             "void"
             "above/below"
             "hsides/vsides"
             "lhs/rhs"
       >"

  <caption> Title of this table </caption>

    <tr>

      <th>
        Table header
      </th>

      <th colspan="number of column">
        Table header
      </th>

    </tr>

    <tr>

      <td rowspan="number of rows">
        Table data
      </td>

      <td>
        Table data
      </td>

      <td>
        Table data
      </td>

    </tr>

    <tr>

      <td>
        Table data
      </td>

      <td>
        Table data
      </td>

    </tr>

</table>
```

Defining attribute values for one or more columns

```
<col style="style definitions" />

<colgroup span="number of columns" style="style definitions">
</colgroup>
```

Grouping content in one or more rows

```
<head>

  <style type="text/css">

    thead      {style definitions}
    tbody      {style definitions}
    tfoot      {style definitions}

  </style>

</head>

<body>

  <table>

    <thead>

      <tr>
        .
        .
        .
      </tr>

    </thead>

    <tbody>

      <tr>
        .
        .
        .
      </tr>

    </tbody>

    <tfoot>

      <tr>
        .
        .
        .
      </tr>

    </tfoot>

  </table>

</body>
```

See Sec. B.2 for CSS

B.1.14 Frames and frameset

Script

```
<!DOCTYPE html
PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

Script

```
<frameset cols="...%, ...%, ...%"
          rows="...%, ...%, ...%"
          >

  <frame src="xxxxxx.html" />
  <frame src="xxxxxx.html" />
  <frame src="../xxxxxx/xxxxxx.html"
         noresize />

  <noframes>
    Sorry, your browser does not handle frames!
  </noframes>

</frameset>
```

Inline frame

```
<iframe src ="xxxxxx.html"
        height="the height of this inline frame"
        width="the width of this inline frame"
        >

  <p> Sorry, your browser does not handle iframe! </p>

</iframe>
```

B.1.15 Characters and symbols

Reserved characters in HTML

&	&	(ampersand)
<	<	(less than)
>	>	(greater than)
’	'	(apostrophe, does not work in IE)
"	"	(quotation mark)

ISO 8859-1 symbols

		(non-breaking space)

Detailed lists of the ISO 8859-1 symbols, the ISO 8859-1 characters as well as the math symbols, Greek letters and other entities supported by HTML can be found in Ref. [1].

B.2 CSS (Cascading Style Sheets)

B.2.1 Comments

Script

```
/*   Comment line   */

/*
  Some comments ...
      .
      .
      .
*/
```

See Secs. B.1.3, B.3.2, and B.5.2 for comments in HTML, JavaScript, and PHP, respectively.

B.2.2 Three ways for inserting CSS

External style sheet

```
<head>

  <link rel="stylesheet" type="text/css"
        href="folder of the css file/name of the css file.css" />

</head>
```

See Secs. B.2.3 and B.2.4

Internal style sheet

```
<head>

  <style type="text/css">
        .
        .
        .
  </style>

</head>
```

See Secs. B.2.3 and B.2.4

Inline style

```
<body>

  <tag style="style declaration" (/)>
       Some text ...
  (</tag>)

  <span style="style declaration">
        Some text ...
  </span>

</body>
```

See Sec. B.2.4

B.2.3 Four forms for defining styles

Forms for style declaration (class/id/attribute selectors)

```
<style type="text/css">

  tag(, tag2, tag3, ...)          {style declaration}

      .general class              {style declaration}
  tag.specified class             {style declaration}

  #specified id                   {style declaration}

  [(user-defined) attribute]      {style declaration}
  tag [attribute]                 {style declaration}

</style>
```

See Sec. B.2.4

Examples

```
<style type="text/css">

  h1                      {style declaration for the "h1" tag}
  h2, h3                  {style declaration for both the "h2" and "h3" tags}

       .en                {style declaration for the "en" class}
  input.data              {style declaration for the "data" class of the "input" tag}

  #main_title             {style declaration for the tag with the id of "main_title"}

  [id]                    {style declaration for all tags with the "id" attribute}
  input[type="text"]      {style declaration for the "input" tag with the type of "text"}
  img[class|=result]      {style declaration for the "img" tag with the class of "result"}

</style>
```

Using defined styles

```
<body>

  <tag class="the unique choice of the general/specified class" (/)>
       Some text ...
  (</tag>)

  <tag id="the specified id of this tag" (/)>
       Some text ...
  (</tag>)

</body>
```

B.2.4 Syntax for style declaration

Example for an external css file

```
  h1          {font-style: italic}
  h2, h4      {font-weight: normal}

    .en       {font-family: "Times New Roman"}
    .en2      {font-family: sans-serif}

  h3.en       {font-family: sans-serif;        color: red}
  h3.en2      {font-family: "Times New Roman"; color: black}
```

Example for the internal style declaration

```
<style type="text/css">

  h2          {color: green}
  h6          {text-align: left; margin-left: 25pt}

</style>
```

More examples for style declaration can be found in Sec. A.1.

Examples for using defined styles (cf. script in Sec. B.1.6)

```
<body class="en">

  <h1> Main Title of the Website </h1>

  <h2> Title of the web page </h2>

  <hr />

  <h3 class="en"> Main title of the category </h3>
  <h4> Title of blocks in the category </h4>

  <hr />

  <h5> Title of the section </h5>

  <div style="margin-left:  50pt">

    <h6> Title of the paragraph </h6>

    <p>
      Some sentences ... <br />
      Some sentences ... <br />

      <span class="en2"> Some sentences ... </span>
    </p>

    <hr />

  </div>

</body>
```

Style declarations given in Template 65 are needed!

Figure 26: Headings with style declarations.

B.2.5 Image handling

Script

```
<style type="text/css">

  img      {position: left/right/top/bottom;
            z-index: 1/-1;                          1: frontground/–1: background

            visibility: visible/hidden;

            opacity: 0.5;                           for Firefox
            filter: alpha(opacity = 50)}            for Internet Explorer

</style>
```

B.2.6 Frequently used style properties and values

Background

```
background-color
background-image: url('../xxxxxx/xxxxxx.jpg')
background-position: left, right, top, bottom, center
background-repeat: repeat, repeat-x, repeat-y, no-repeat
```

Font

```
font-family: "Times New Roman", Times, serif, sans-serifs
font-weight: bold
font-style: italic
font-size
```

Text

```
color
height
width
line-height
text-align: left, right, center
vertical-align: top, bottom, middle
text-indent
text-decoration: underline, overline, line-through

p:first-letter
```

Margin

```
margin
margin-left
margin-right
margin-top
margin-bottom
```

Links

```
a:link
a:visited
a:hover
a:active
```

Lists

```
list-style-type: decimal, disc
```

Border

```
border
border-left
border-right
border-top
border-bottom

border-style: solid, dashed, dotted, double, groove, ridge, inset, outset, hidden, none
border-color
border-width
```

Padding

```
padding
padding-left
padding-right
padding-top
padding-bottom
```

Cursor

```
cursor: default, pointer, progress, wait, text, help, move, crosshair,
        e-resize, w-resize, n-resize, s-resize, ne-resize, nw-resize, se-resize, sw-resize
```

See Sec. B.4.5 for frequently used HTML DOM properties for style declaration.

B.3 JavaScript

B.3.1 Start with JavaScript

Script

```
<script type="text/javascript">

  document.write("some text");

  document.write("some text" + \'single quote\' + \& + \"double quote\" + \\ + \n);

</script>
```

See Sec. B.5.1 for basic PHP syntax.

B.3.2 Comments

Script

```
<script type="text/javascript">
//   Comment line

/*   Comment line   */

/*
  Some comments ...
      .
      .
      .
      .
*/
</script>
```

See Secs. B.1.3, B.2.1, and B.5.2 for comments in HTML, CSS, and PHP, respectively.

B.3.3 Variables

Script

```
<script type="text/javascript">
  var xxx;
  var xxx_xxx;

  var xxx = number;
  var xxx_xxx = "string";

  var xxx = number + xxx;
  var xxx_xxx = "string" + xxx_xxx;
</script>
```

See Sec. B.5.3 for variables in PHP.

B.3.4 Function defining

Script

```
<script type="text/javascript">
  function function_without_variable()
  {
      .
      .
      .
  }

  function function_with_variable(xxx, yyy, ...)
  {
      .
      .
      .
  }
</script>
```

Examples can be found in Sec. B.4.4.

B.3.5 if

Script

```
<script type="text/javascript">
  if ((xxx     == yyy     &&
       xxx_xxx != yyy_yyy   ) ||
      (condition            ) ||
      (!(condition)         )   )
  {
      .
      .
      .
  }

  else
  if (conditions)
  {
      .
      .
      .
  }

  else
  {
      .
      .
      .
  }
</script>
```

See Sec. B.5.4 for `if`, `else if` and `else` comments in PHP.

Script

```
<script type="text/javascript">
 xxx = (condition) ? yyy : zzz;
</script>
```

B.3.6 switch

Script

```
<script type="text/javascript">
  switch (xxx)
  {
    case x:
      ......;
      break;

    case y:
      ......;
      break;

    default:
      ......;
  }
</script>
```

See Sec. B.5.5 for `switch` comment in PHP.

B.3.7 for

Script

```
<script type="text/javascript">
  for (xxx = 1; xxx <= xxx_max; xxx ++)
  {
     .
     .
     .
  }
</script>
```

Script

```
<script type="text/javascript">
  var yyy = Array()

  yyy[0] = "zzz";
  yyy[1] = "zzz";
     .
     .
     .

  for (xxx in yyy)
  {
     .
     .
     .
  }
</script>
```

See Sec. B.5.6 for `for` and `foreach as` comments in PHP.

B.3.8 while

Script

```
<script type="text/javascript">
  while (conditions)
  {
     .
     .
     .
  }
</script>
```

Script

```
<script type="text/javascript">
  do
  {
     .
     .
     .
  }
  while (conditions);
</script>
```

See Sec. B.5.7 for `while` and `do while` comments in PHP.

B.3.9 Events

Frequently used events

```
<tag onload=   "......"
     onunload="......"

     onkeydown= "......"
     onkeypress="......"
     onkeyup=   "......"

     onclick=  "......"
     ondbclick="......"

     onmouseover="......"  }  Together!
     onmouseout= "......"
     onmousemove="......"

     onmousedown="......"
     onmouseup=  "......"

     (/) >
```

Examples can be found in Sec. B.4.4.

B.3.10 Frequently used JavaScript methods

`new Date()` object

```
<script type="text/javascript">
  document.write(new Date().getFullYear());        A four digit representation of a year

  document.write(new Date().getMonth());           A numeric representation of a month (0 to 11)

  document.write(new Date().getDate());            The day of the month (1 to 31)
  document.write(new Date().getDay());             A numeric representation of a day of the week (0 to 6)

  document.write(new Date().getHours());           24-hour format of an hour (0 to 23)
  document.write(new Date().getUTCHours());        24-hour format of an hour, according to universal time

  document.write(new Date().getMinutes());         Minutes without leading zeros (0 to 59)
  document.write(new Date().getSeconds());         Seconds without leading zeros (0 to 59)
</script>
```

`Math` object

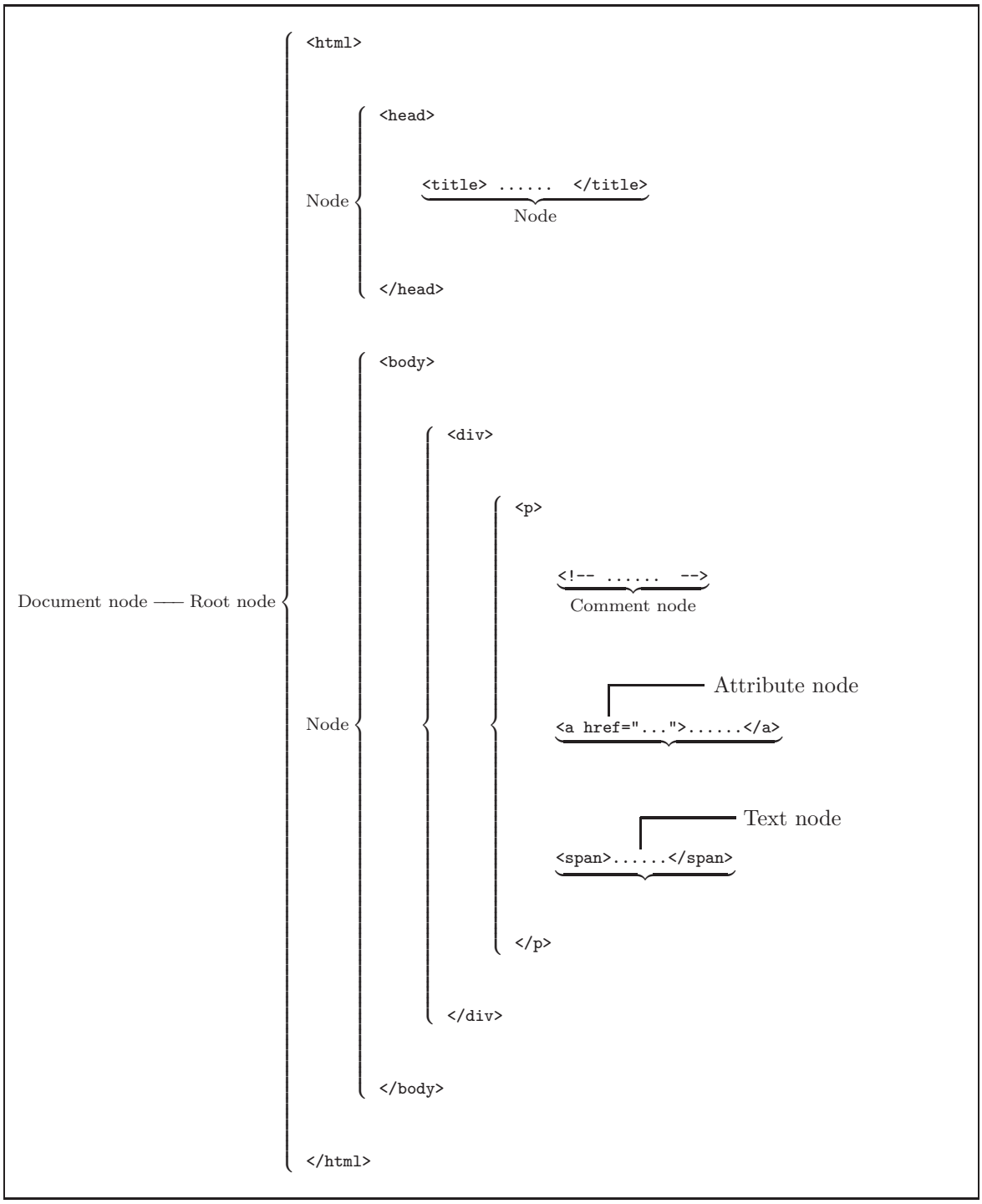
```
Math.abs(), Math.ceil(), Math.floor(), Math.round(), Math.max(), Math.min(),
Math.sin(), Math.cos(), Math.tan(),
Math.asin(), Math.acos(), Math.atan(),
Math.sqrt(), Math.pow(), Math.exp(), Math.log(),
Math.random()
```

See Sec. B.5.12 for frequently used PHP functions.

B.4 HTML DOM (Document Object Model)

B.4.1 Nodes and node tree

Nodes



See Sec. B.1.4 for the basic structure of an HTML document.

B.4.2 Methods

Script

```
<script type="text/javascript">
  node_object.getElementById("specified_id").property
  node_object.getElementByName("specified_name").property
  node_object.getElementByTagName("specified_tag").property
</script>
```

See Sec. B.4.3 for HTML DOM properties.

B.4.3 Properties

Script

```
<script type="text/javascript">
  node_object.parentNode.property
  node_object.childNodes[number].property

  node_object.firstChild.property
  node_object.lastChild.property

  node_object.previousSibling.property
  node_object.nextSibling.property

  node_object.attributes[number].property

  node_object.nodeName  = "......";
  node_object.nodeType  = "......";
  node_object.nodeValue = "......";

  node_object.name  = "......";
  node_object.type  = "......";
  node_object.value = "......";

  node_object.innerHTML = "......";
</script>
```

Links

```
  anchor_node_object.href
  anchor_node_object.src
```

input

```
  input_node_object.checked = true, false
  input_node_object.disabled = true, false
```

B.4.4 Examples

Combined with "events"

```
<input type="radio"
       onmouseover="this.nextSibling.nextSibling.style.color = 'red';
                    this.nextSibling.nextSibling.style.fontWeight = 'bold'"
       onmouseout= "this.nextSibling.nextSibling.style.color = 'black';
                    this.nextSibling.nextSibling.style.fontWeight = 'normal'"
       onclick=    "this.checked = false"
       />
       <span> Some text ... </span>
```

Combined with "events" and "functions"

```
<script type="text/javascript">
  function change_color(row_number, item_number, color_user)
  {
    document.getElementById(row_number).childNodes[item_number].style.color = color_user;
  }

  function recover_color(row_number, item_number)
  {
    document.getElementById(row_number).childNodes[item_number].style.color = 'black';
  }
</script>

<table border="1">

  <tr id="row_1">

    <th onmouseover="change_color('row_1', 0, 'red')"
        onmouseout= "recover_color('row_1', 0)">
        cell(1,1)
    </th>

    <th onmouseover="change_color('row_1', 1, 'blue')"
        onmouseout= "recover_color('row_1', 1)">
        cell(1,2)
    </th>

  </tr>

  <tr id="row_2">

    <th onmouseover="change_color('row_2', 0, 'lightgreen')"
        onmouseout= "recover_color('row_2', 0)">
        cell(2,1)
    </th>

    <th onmouseover="change_color('row_2', 1, 'gold')"
        onmouseout= "recover_color('row_2', 1)">
        cell(2,2)
    </th>

  </tr>

</table>
```

More examples can be found in Chap. 3.

B.4.5 Frequently used HTML DOM properties for style declaration

Background

```
style.backgroundColor
style.backgroundImage = "url('../xxxxxx/xxxxxx.jpg')"
style.backgroundPosition = "left", "right", "top", "bottom", "center"
style.backgroundRepeat = "repeat", "repeat-x", "repeat-y", "no-repeat"
```

Font

```
style.fontFamily = "Times New Roman", "Times", "serif", "sans-serifs"
style.fontWeight = "bold"
style.fontStyle = "italic"
style.fontSize
```

Text

```
style.color
style.height
style.width
style.lineHeight
style.textAlign = "left", "right", "center"
style.verticalAlign = "top", "bottom", "middle"
style.textIndent
style.textDecoration = "underline", "overline", "line-through"
```

Margin

```
style.margin
style.marginLeft
style.marginRight
style.marginTop
style.marginBottom
```

Image

```
style.visibility = "visible", "hidden"
style.zIndex = "1", "-1"
```

Lists

```
style.listStyleType = "decimal", "disc"
```

Border

```
style.border
style.borderLeft
style.borderRight
style.borderTop
style.borderBottom

style.borderStyle = "solid", "dashed", "dotted", "double"
                    "groove", "ridge", "inset", "outset", "hidden", "none"
style.borderColor
style.borderWidth
```

Padding

```
style.padding
style.paddingLeft
style.paddingRight
style.paddingTop
style.paddingBottom
```

Cursor

```
style.cursor = "default", "pointer", "progress", "wait", "text", "help", "move", "crosshair",
               "e-resize", "w-resize", "n-resize", "s-resize",
               "ne-resize", "nw-resize", "se-resize", "sw-resize"
```

See Sec. B.2.6 for frequently used style properties and values in CSS.

B.4.6 Navigator object

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
     .
     .
     .
  }

  else
  if (navigator.userAgent.search("Netscape") != -1 ||
      navigator.userAgent.search("Firefox" ) != -1 ||
      navigator.userAgent.search("Safari"  ) != -1   )
  {
     .
     .
     .
  }
</script>
```

B.4.7 Location object

Script

```
<script type="text/javascript">
  if (navigator.appName == "Microsoft Internet Explorer")
  {
    window.location = "#specified_id";
  }
</script>

<h3 id="specified_id> Main title of the catagory </h3>

<script type="text/javascript">
  if (navigator.userAgent.search("Firefox") != -1 ||
      navigator.userAgent.search("Safari" ) != -1   )
  {
    window.location = "#specified_id";
  }
</script>

      .
      .
      .

<script type="text/javascript">
  if (navigator.userAgent.search("Netscape") != -1)
  {
    window.location.hash = "#specified_id";
  }
</script>
```

Methods

```
reload(), replace("new_url")
```

B.5 PHP (PHP: Hypertext Preprocessor)

B.5.1 Start with PHP

Script

```
<?php

  echo "some text";

  echo "some text" . "'single quote'" . '"double quote"' . '\r\n';

?>
```

See Sec. B.3.1 for basic JavaScript syntax.

B.5.2 Comments

Script

```
<?php
//   Comment line

/*   Comment line   */

/*
  Some comments ...
      .
      .
      .
      .
*/
?>
```

See Secs. B.1.3, B.2.1, and B.3.2 for comments in HTML, CSS, and JavaScript, respectively.

B.5.3 Variables

Script

```
<?php
  $xxx = number;
  $xxx_xxx = "string";

  $xxx[$yyy] = number;
  $xxx_xxx[$yyy] = "string";

  $xxx = number + $xxx;
  $xxx_xxx = "string" . $xxx_xxx;
?>
```

See Sec. B.3.3 for variables in JavaScript.

B.5.4 if

Script

```
<?php
  if (($xxx     == $yyy     &&
       $xxx_xxx != $yyy_yyy   ) ||
      (condition              ) ||
      (!(condition)           )   )
  {
      .
      .
      .
  }

  elseif (conditions)
  {
      .
      .
      .
  }

  else
  {
      .
      .
      .
  }
?>
```

See Sec. B.3.5 for `if`, `else if` and `else` comments in JavaScript.

B.5.5 switch

Script

```
<?php
  switch ($xxx)
  {
    case x:
      ......;
      break;

    case y:
      ......;
      break;

    default:
      ......;
  }
?>
```

See Sec. B.3.6 for `switch` comment in JaveScript.

B.5.6 for

Script

```
<?php
  for ($xxx = 1; $xxx <= $xxx_max; $xxx ++)
  {
     .
     .
     .
  }
?>
```

Script

```
<?php
  $yyy = array("zzz", "zzz", ...);

  foreach ($yyy as $value)
  {
     .
     .
     .
  }
?>
```

See Sec. B.3.7 for `for` and `for in` comments in JavaScript.

B.5.7 while

Script

```
<?php
  while (conditions)
  {
     .
     .
     .
  }
?>
```

Script

```
<?php
  do
  {
     .
     .
     .
  }
  while (conditions);
?>
```

See Sec. B.3.8 for `while` and `do while` comments in JaveScript.

B.5.8 form

Script

```
<form action="login_check.php"
      method="post/get"
      enctype="multipart/form-data>"

  <fieldset>

    <legend> Login </legend>

    <input type="text"     name="user_name"     /> <br/ >
    <input type="password" name="user_password" /> <br/ >

  </fieldset>

        .
        .
        .

  <input type="submit" name="submit" value="Submit" />
  <br />

</form>
```

login_check.php

```
<?php
  $user_name     = $_POST["user_name"];
  $user_password = $_POST["user_password"];
?>
```

Modification

```
<?php
  $xxx = $_Get["xxx"];
  $yyy = $_Get["yyy"];
?>
```

B.5.9 File handling

Script

```
<?php
  $data_input = fopen("data.txt", "r");

  do
  {
     .
     .
     .
  }
  while (!feof($data_input));

  fclose($data_input);

     .
     .
     .

  $result_output = fopen("result.txt", "w/a");
     .
     .
     .
  fclose($result_output);
?>
```

Frequently used functions for file handling

```
fopen(), fclose(),
fputs(), fscanf(),
file_exists(), feof(),
link(), unlink(), copy(),
move_uploaded_file(),
mkdir(), rmdir()
```

See Sec. B.5.10 for more details about the `move_uploaded_file()` function.

B.5.10 File uploading

Script

```
<form action="get_file.php"
      method="post"
      enctype="multipart/form-data>"

  <fieldset>

    <legend> File uploading </legend>

    <input type="file" name="uploaded_file" /> <br />

  </fieldset>

        .
        .
        .

  <input type="submit" name="submit" value="Submit" />
  <br />

</form>
```

get_file.php

```
<?php
  move_uploaded_file($_FILES["uploaded_file"]["tmp_name"],
                     "folder_name/" . $_FILES["uploaded_file"]["name"]);

  if (file_exists("folder_name/" . $_FILES["uploaded_file"]["name"]))
  {
    if ($_FILES["uploaded_file"]["type"] = "image/jpeg")
    {
       .
       .
       .
    }

    if ($_FILES["uploaded_file"]["size"] > 20000)
    {
       .
       .
       .
    }

     .
     .
     .
  }
?>
```

More examples for file uploading and handling can be found in Chap. 2.

B.5.11 E-mail sending

Script

```
<?php
  mail(e-mail address of a receiver,
       subject of this e-mail,
       message of this e-mail,
       'From: xxxxxx@xxxxxx.xxx.xx' . "\r\n" .
       'Cc:   yyyyyy@yyyyyy.yyy.yy' . "\r\n" .
       'Bcc:  zzzzzz@zzzzzz.zzz.zz',
       an additional parameter (optional));
?>
```

See Sec. B.1.8 for e-mail sending with an <a> tag in HTML.

Example

```
<?php
  if ($_POST["confirm_email"] == "yes")
  {
    mail($_POST["new_participant_email_address"],

         '[Auto submission] Registration confirmation',

         'Dear '. $_POST["new_participant_title"]   . ' ' .
                  $_POST["new_participant_surname"] . ',' . "\r\n" .
                                                      "\r\n" .

         'Herewith we would be glad to confirm '          .
         'your registration by ..... '                    .
         'with the following personal information:'       . "\r\n" .
                                                            "\r\n" .

         'Title:   ' . $_POST["new_participant_title"]    . "\r\n" .
         'Surname: ' . $_POST["new_participant_surname"]  . "\r\n" .
         'Name:    ' . $_POST["new_participant_name"]     . "\r\n" .

             .
             .
             .

         'Thank you very much for your registration. '    .
         'Should you have any questions, '                .
         'please don\'t hesitate to contact us.'          . "\r\n" .
                                                            "\r\n" .

         'We are looking forward to seeing you.'          . "\r\n" .
                                                            "\r\n" .

         'Sincerely yours,'                               . "\r\n" .
                                                            "\r\n" .
                                                            "\r\n" .

         'The organization committee'                     . "\r\n" .
                                                            "\r\n" ,

         'From: xxxxxx@xxxxxx.xxx.xx' . "\r\n" .
         'Cc:   yyyyyy@yyyyyy.yyy.yy' . "\r\n" .
         'Bcc:  zzzzzz@zzzzzz.zzz.zz'           );
  }
?>
```

B.5.12 Frequently used functions

String

```
printf(), fprintf(), sprintf()
```

Date and time

```
<?php
  echo gmdate(Y);       A four digit representation of a year
  echo gmdate(y);       A two digit representation of a year

  echo gmdate(m);       A numeric representation of a month (01 to 12)
  echo gmdate(n);       A numeric representation of a month without leading zeros (1 to 12)
  echo gmdate(F);       A full textual representation of a month
  echo gmdate(M);       A short textual representation of a month (three letters)

  echo gmdate(z);       The day of the year (0 to 365)
  echo gmdate(d);       The day of the month (01 to 31)
  echo gmdate(j);       The day of the month without leading zeros (1 to 31)
  echo gmdate(l);       A full textual representation of a day of the week (lowercase 'L')
  echo gmdate(D);       A textual representation of a day of the week (three letters)

  echo gmdate(A);       Uppercase AM or PM
  echo gmdate(a);       Lowercase am or pm

  echo gmdate(H);       24-hour format of an hour (00 to 23)
  echo gmdate(G);       24-hour format of an hour (0 to 23)
  echo gmdate(h);       12-hour format of an hour (01 to 12)
  echo gmdate(g);       12-hour format of an hour (1 to 12)

  echo gmdate(i);       Minutes with leading zeros (00 to 59)
  echo gmdate(s);       Seconds with leading zeros (00 to 59)
?>
```

Math

```
abs(), ceil(), floor(), round(), max(), min(),
sin(), cos(), tan(), sinh(), cosh(), tanh(),
asin(), acos(), atan(), asinh(), acosh(), atanh(),
sqrt(), pow(), exp(), log(), log10(),
rand()
```

File including

```
<?php
  include("folder_name/full_file_name_with_the_extension");
?>
```

Shell commands

```
<?php
  shell_exec("a shell command");
?>
```

See Sec. B.3.10 for frequently used JavaScript methods.

B.6 Colors

In this section I list some most frequently used colors (in my opinion) for building a web page. Note that the W3C HTML and CSS standards have listed only 16 valid color names: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow; other colors have to be defined with their HEX values.

B.6.1 Red series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
red	red		#FF0000	{1 ,0 ,0 }
darkred	darkred		#8B0000	{0.55,0 ,0 }
orange	orange		#FFA500	{1 ,0.65,0 }
orangered	orangered		#FF4500	{1 ,0.27,0 }
salmon	salmon		#FA8072	{0.98,0.5 ,0.45}
coral	coral		#FF7F50	{1 ,0.5 ,0.31}
tomato	tomato		#FF6347	{1 ,0.39,0.28}
hotpink	hotpink		#FF69B4	{1 ,0.41,0.71}
deeppink	deeppink		#FF1493	{1 ,0.08,0.58}
crimson	crimson		#DC143C	{0.86,0.08,0.24}
chocolate	chocolate		#D2691E	{0.82,0.41,0.12}
firebrick	firebrick		#B22222	{0.7 ,0.13,0.13}
brown	brown		#A52A2A	{0.65,0.16,0.16}

B.6.2 Green series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
green	green		#008000	{0 ,0.5 ,0 }
darkgreen	darkgreen		#006400	{0 ,0.39,0 }
lime	lime		#00FF00	{0 ,1 ,0 }
limegreen	limegreen		#32CD32	{0.2 ,0.8 ,0.2 }
forestgreen	forestgreen		#228B22	{0.13,0.55,0.13}
lightgreen	lightgreen		#90EE90	{0.56,0.93,0.56}
springgreen	springgreen		#00FF7F	{0 ,1 ,0.5 }
greenyellow	greenyellow		#ADFF2F	{0.68,1 ,0.18}
lawngreen	lawngreen		#7CFC00	{0.49,0.99,0 }
yellowgreen	yellowgreen		#9ACD32	{0.6 ,0.8 ,0.2 }
olive	olive		#808000	{0.5 ,0.5 ,0 }

B.6.3 Blue series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
blue	blue		#0000FF	{0 ,0 ,1 }
darkblue	darkblue		#00008B	{0 ,0 ,0.55}
cyan	cyan		#00FFFF	{0 ,1 ,1 }
darkcyan	darkcyan		#008B8B	{0 ,0.55,0.55}
skyblue	skyblue		#87CEEB	{0.53,0.81,0.92}
slateblue	slateblue		#6A5ACD	{0.42,0.35,0.8 }
royalblue	royalblue		#4169E1	{0.25,0.41,0.88}

B.6.4 Violet series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
plum	plum		#DDA0DD	{0.87,0.63,0.87}
violet	violet		#EE82EE	{0.93,0.51,0.93}
magenta	magenta		#FF00FF	{1 ,0 ,1 }
mediumpurple	mediumpurple		#9370D8	{0.58,0.44,0.85}
blueviolet	blueviolet		#8A2BE2	{0.54,0.17,0.89}
darkviolet	darkviolet		#9400D3	{0.58,0 ,0.83}
purple	purple		#800080	{0.5 ,0 ,0.5 }

B.6.5 Yellow series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
yellow	yellow		#FFFF00	{1 ,1 ,0 }
gold	gold		#FFD700	{1 ,0.84,0 }
goldenrod	goldenrod		#DAA520	{0.85,0.65,0.13}
darkgoldenrod	darkgoldenrod		#B8860B	{0.72,0.53,0.04}

B.6.6 White-black series

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
white			#FFFFFF	{1 ,1 ,1 }
gainsboro	gainsboro		#DCDCDC	{0.86,0.86,0.86}
silver	silver		#C0C0C0	{0.75,0.75,0.75}
gray	gray		#808080	{0.5 ,0.5 ,0.5 }
grey	grey		#808080	{0.5 ,0.5 ,0.5 }
dimgray	dimgray		#696969	{0.41,0.41,0.41}
dimgrey	dimgrey		#696969	{0.41,0.41,0.41}
darkgray	darkgray		#404040	{0.25,0.25,0.25}
darkgrey	darkgrey		#404040	{0.25,0.25,0.25}
black	black		#000000	{0 ,0 ,0 }

B.6.7 Non-white backgrounds

Definitions

Name	In text	In background	HEX value	rgb value {r, g, b}
peachpuff	peachpuff		#FFDAB9	{1 ,0.85,0.73}
navajowhite	navajowhite		#FFDEAD	{1 ,0.87,0.68}
pink	pink		#FFC0CB	{1 ,0.75,0.80}
wheat	wheat		#F5DEB3	{0.96,0.87,0.70}

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References

1. W3Schools online web tutorials, `http://www.w3schools.com/`.
2. Online validators: `http://validator.w3.org/` for (X)HTML, `http://jigsaw.w3.org/` for CSS.